

Mass eDEP BWP AIR QUALITY SOURCE REGISTRATION INSTRUCTIONS:

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BWP AQ AP-SR Source Registration/Emission Statement Instructions

PURPOSE	This form provides basic descriptive information about the facility.
WHO MUST FILE THIS FORM?	This form must be completed by each facility submitting their Source Registration.
HOW MANY VERSIONS OF THIS FORM ARE REQUIRED?	Submit one form for the whole facility.
IN WHAT ORDER SHOULD I COMPLETE THIS PACKAGE?	Complete this form first because it contains information that will populate the other forms in the Source Registration Package. (Note: Although you will be filling in certification statement information at the end of the form, the statement will not be "signed" until the responsible official completes the STEP 2 of the eDEP electronic filing process "Acceptance". That step happens after all of the required forms have been filled in and validated.
NOTE FOR REPEAT FILERS:	Most of the information on this form will have been filled in by eDEP. You may make changes to most fields.

A. FACILITY INFORMATION

How to change locked fields?	<p>Facility Name and street address: You must contact your Regional FMF Data Manager to change the facility name and/or address.</p> <p>The list of MassDEP regional offices and the FMF Data manager's phone numbers can be found on the Source Registration Website: http://mass.gov/dep/service/compliance/instru05.htm</p> <p>To access the website open another internet browser window and copy and paste the URL into the address line.</p> <p>The Facility AQ Identifier is a permanent identifying number assigned by MassDEP to a particular location; you may recognize it as the old SSEIS ID. If you believe this number is incorrect (e.g. it is not the facility's SSEIS ID number shown on prior source registrations) contact the Source Registration Data Manager at 671 292 5609.</p> <p>The MassDEP Account number / FMF Facility # is assigned by MassDEP. It changes with ownership. If you believe the number is wrong (e.g. it is different than the number shown on your bill or permit approvals contact your Regional FMF Data Manager. You cannot change it.</p>
1. Facility	
a. Facility Name	<p>The name must uniquely identify the facility. If the parent corporation operates more than one facility, the corporate name alone is insufficient.</p> <p>Note: you cannot change your facility name: if you need to do so you must contact your Regional MassDEP Data Manager</p>
How to change facility name?	<p>To change the facility name or address you must contact your regional BWP Data Manager. The list of MassDEP regional offices and the phone numbers of the data managers can be found on the Source Registration Web page: http://mass.gov/dep/service/compliance/sr.htm</p>

How do I access the web page?

To access the web page open another internet browser window and copy and paste the url into the address line.

b. Facility Address

Address for the facility (not mailing or corporate address, if different)

b. Facility Street Address Line 1 c. Facility Street Address Line 2 d. City/Town e. State	f. Zip Code g. Facility Phone Number h. Facility Fax Number
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2. Mailing Address

Name of facility where mail regarding the source registration should be sent

The address to which you want future registration packages and notifications sent, if different than the street address above.

A.2.a-e

Facility information rather than corporate/owner information, if they are different:

Address where mail regarding the source registration should be sent	
a. Facility Mailing Address/PO Box Line 1 b. Facility Mailing Address/PO Box Line 2 c. City/Town	d. State e. Zip Code

3 Facility Type – check one:

- Utility
- Private
- Tribal
- Federal Government
- State Government
- Local Government

If facility is a utility check "utility" box regardless of type of ownership

Utility: Check this box if the facility is a utility, regardless of ownership (i.e. private, tribal, federal, state, local government)

Private: If the facility is a utility, do not check this box, check the utility box

Tribal: If the facility is a utility, do not check this box, check the utility box

Federal: If the facility is a utility, do not check this box, check the utility box

State: If the facility is a utility, do not check this box, check the utility box

Local Government: If the facility is a utility, do not check this box, check the utility box

4. ORIS Facility Code

This only applies to large electrical utility facilities.

5. ID Numbers

These are assigned by MassDEP and cannot be changed

a. DEP Account Number

This is the unique Identification Number MassDEP assigns to represent your entire facility in its information management systems.

Facility AQ Identifiers – SSEIS ID Number

This is the ID number MassDEP assigns to identify your facility in the Stationary Source Emission Inventory System (SSEIS) MassDEP's computer system for storing this information.

6. Location (Check the box for the method you are using to show your facilities geographic location:)

a. Universal Transverse Mercator (UTM) or b. Latitude/Longitude (Lat/Long)

UTM coordinates for your facility can be found on a local USGS Topographic maps.

- Valid UTM Ranges
- Horizontal: 251000 – 749000
- Vertical: 4566000 - 4749000

c. UTM Horizontal-meters

d. UTM Vertical – meters

e. UTM Zone

To access the web page open another internet browser window and copy and paste the URL into the address line. Go to the Source Registration Web page for more details:

<http://mass.gov/dep/service/compliance/sr.htm>

f. Lat: 42.9° – 41.2°

Please see Appendix C: Example Calculations for an explanation of how to find your UTM coordinates on a USGS Topographical Map.

g. Long: 73.5° – 69.8°

CAUTION: Latitude/Longitude coordinates must be within the ranges specified on the form Latitude: 42.9° – 41.2°; Longitude: 73.5° – 69.8° (enter positive values only)

How do you find / verify the latitude/longitude for your facility?

NOTE: You only need to fill out either UTM coordinates OR latitude/longitude. If you submitted UTM coordinates in the past, MassDEP converted them into Latitude/Longitude.

Go to the MAPS FOR MY COMMUNITY page of the MassDEP website and follow the steps below.

[1] Go to MAPS FOR MY COMMUNITY: http://mass.gov/dep/service/my_comm/mycomm.htm

[2] Select your community and hit go.

[3] Get Wetlands MAP (found in lower part of screen).

[4] Click on Icon to zoom and create a box over the map where facility is located.

[5] Repeat box creation until facility is clearly visible.

[6] Click on "xy" icon in lower right of screen and move cross hairs over the front door of the facility

[7] Left click on your mouse and box should appear with the lat and long coordinates.

- Get Wetlands MAP in lower part of screen.
- Click on Icon to zoom and create box over map where facility is located.
- Repeat box creation until facility is clearly visible.
- Click on xy icon in lower right of screen and move cross hairs over the front door of the facility
- And left click on your mouse.
- A box should appear with the lat and long coordinates.

7. North American Industry classification code(s) NAICs

The six-digit code that classifies facilities by the types of products they produce, as submitted on your facility's Federal IRS forms.

Click on the hyper link to access the US Census Department list of NAIC codes:

<http://www.census.gov/epcd/www/naics.html>

Facilities may be engaged in more than one line of business. You can list up to 4 different codes in the spaces provided

How to find NAICS codes?

NAICS codes are six digit codes used to classify facilities by the types of products they produce. These are submitted on your Federal IRS forms. Additional information about NAICS codes can be found at the U.S. Census Bureau Website <http://www.census.gov/epcd/www/naics.html>. To access the website open another internet browser window and copy and paste the URL into the address line.

NAICS codes are six digit codes used to classify facilities by the types of products they produce. These are submitted on your Federal IRS forms. Additional information about NAICS codes can be found at the U.S. Census Bureau Website: <http://www.census.gov/epcd/www/naics.html>

? NAIC help

How do I access the website?

To access the website open another internet browser window and copy and paste the url into the address line.

8. Facility description

What is being produced and how. *e.g. Screen printed tee shirts*

9. Facility's normal hours of operation

- Start time
- End Time

✓ *Typical*/start and end times for the facility

Continuous – 24x7x52
a. Which days is the facility open?

- S(unday)
- M(onday)
- T(uesday)
- W(ednesday)
- T(hursday)
- F(riday)
- S(aturday)

Check this box, if the facility typically operates twenty four hours a day seven days a week
Check the days of the week the facility is *typically* operated.

10. Number Of Employees

The maximum number at any time during the year of record

The maximum number of employees that worked at the facility during the day during the calendar year being reported on

Exclude from this count those employees that met both of the following conditions:

- ✓ The employee worked less than 17 hours a week
and
- ✓ The employee worked less than 20 weeks per year.

Include in the your count those employees that met only one of the preceding conditions.

How to count the number of employees?

The number of employees should reflect the maximum number of employees that worked at the facility during the day during the calendar year being reported. Include in the count those employees that worked at least 17 hours per week and 20 weeks per year

11. Facility Owner

Name of corporation, partnership, etc. if separate from facility

Report the facility information as reported on the Tax Identification Number (TIN) Form for your facility. TIN is also referred to as Federal Employee Identification Number (FEIN) or Employee Identification Number (EIN)

Please contact your MassDEP Regional Office if the ownership of this facility has changed.

Who is the owner?

The owner is the individual or entity that is reported on your Federal Employer Tax Identification Number

a. Owner or Corporation Name	g. Country
b. Mailing Address Line 1	h. Owner Phone Number
c. Mailing Address Line 2	i. Extension
d. City/Town	j. Owner Fax Number
e. State	k. Owner E-mail Address
f. Zip Code	l. Owner TIN (Taxpayer Identification Number)

12. Facility contact information

If contact name and/or address was listed previously, check appropriate box and the needed information will be filled in automatically

Otherwise provide the requested information

a. Facility Contact FirstName and Last Name b. Mailing Address Line 1 c. Mailing Address Line 2 d. City/Town e. State f. Zip Code	g. Country h. E-mail Address i. Phone Number j. Extension k. Fax Number
--	---

13. Air emissions
information contact

The name of the individual who should be contacted for further information about the form(s)

If contact name and/or address was listed previously, check appropriate box and the needed information will be filled in automatically

Otherwise provide the requested information:

a. Air Emissions Contact First Name and LastName b. Mailing Address Line 1 c. Mailing Address Line 2 d. City/Town e. State f. Zip Code	g. Country h. E-mail Address i. Phone Number j. Extension k. Fax Number
---	---

B. PREPARER

1. Identification
information for preparer
of this submittal

If contact name or address were the same as one listed previously, check appropriate boxes and the needed information will be filled in automatically

Otherwise, supply the requested information:

a. Preparer Contact FirstName and LastName b. Mailing Address Line 1 c. Mailing Address Line 2 d. City/Town e. State f. Zip Code	g. Country h. E-mail Address i. Phone Number j. Extension k. Fax Number
---	---

C. NOTES AND ATTACHMENTS

1 Notes:

This section is to identify any explanatory material the facility is choosing to submit along with this form.

You do not need to duplicate anything on this form that you included on other forms.

If the material can be sent electronically, check the box for the appropriate form

2. Attachments

If paper information must be submitted, list the titles of the documents being submitted in the Notes


D. CERTIFICATION

Note: Although you are providing this information now, the certification statement won't be "signed" until the second step of the eDEP Reporting process: "2. Acceptance"

The Responsible Official completes the "Acceptance" step, and by so doing "signs" the certification statement. When that is done, step 3 "Submit" to MassDEP can happen.

If you are not the Responsible Official you will be able to "Share" the completed package with that individual so that they can complete the Acceptance Step. They will have to obtain a user ID.

Signature Of
Responsible Official,
Signed Under The Pains
And Penalties Of Perjury
and Date

This Certification statement must be reviewed and signed under the pains and penalties of perjury by a responsible official  at the location. If an agent has been designated to fill out this form, the responsible official must review the forms and sign the certification statement.

CAUTION: In order to be considered a "responsible official" an individual working at the facility must meet the criteria listed in Appendix A: Definitions.

**Who is a responsible
official?**

For electronic filers only: eDEP will insert the signature and date after the form has been submitted electronically

*For a *Sole Proprietorship*: The responsible official is the sole proprietor

*For a *Partnership*: The responsible official is a general partner with the authority to bind the partnership

*For a *Corporation or a non-profit corporation*: The responsible official is a corporate official with authority to bind the corporation such as a:

- 1) President,
- 2) Secretary,
- 3) Treasurer,
- 4) Vice president of the corporation in charge of a business function, or
- 5) Any other person who performs similar policymaking or decision-making functions of the corporation.

*For a *Municipality or other public agency*: The responsible official is any one of the following individuals:

- (1) A principal executive officer or
- (2) A ranking elected official who is empowered to enter into contracts on

**What if the preparer is
not a "responsible
official"?**

When a preparer is not a Responsible Official, he or she can complete and validate the forms but cannot sign or submit the package. Instead, the preparer **must return** to the <Current Submittals> screen and "**share**" the completed package with a **Responsible Official** who in turn completes the Acceptance phase (signs the package) and submits it to MassDEP.

Note: a "Responsible Official", must register with eDEP before the preparer can share the package.

Responsible official
information: Print Name

a. Print **First** Name

d. Phone Number

b. Print **Last** Name

e. E-mail Address

c. Title

Note: you have completed the source registration (AP-SR) form

Validate the form: the system will identify and force you to correct any mistakes before it will "accept" the form and return you to the <Related Forms-Transmittal ID> page where you can pick the next form to work on

BWP AQ AP-1 Emission Unit – Fuel Utilization Equipment Instructions

PURPOSE

This form describes fuel use, equipment, and emissions at the facility during the calendar year being reported from all combustion processes, except waste incineration and air pollution control equipment "combustion devices", such as flares or afterburners.

WHEN IS THIS FORM APPLICABLE?

The number of versions of this form depends on whether you are filing in paper or electronically

Applicability for electronic filers

This form applies if your facility has a **total energy input** capacity in excess of 10 million BTU per hour. Be sure to include internal combustion engines such as diesel and turbines driving emergency generators; also include, space heaters in this sum.

Applicability for paper filers

Exclude the following combustion activities:

Waste incineration and their auxiliary burners (reported on the AP-3 form)

Air pollution control equipment (reported on the appropriate AP-1, AP-2 or AP-3 form).

Only Submit this form if you are a first time filer or if you are repeat filer with a new combustion emission unit. (Existing emissions units will show up on your "Side by Side" paper report and the emissions information should be provided on that form)

If you are a first time filer and this form does not apply, write Not Applicable on the form and submit it with the rest of the package.

HOW MANY VERSIONS OF THIS FORM ARE REQUIRED?

The number of versions of this form depends on whether you are filing in paper or electronically

How many versions of this form do electronic filers have to submit?

Submit one form for each boiler or internal combustion engine (*e.g., diesels or turbines*) with a rated input capacity equal to or greater than the thresholds listed below. Each unit exceeding the threshold is considered a separate emission unit, and must be reported on it's own BWP AQ AP-1. You must include any fuel utilization units added or decommissioned since your last source registration:

Distillate oil	>10,000,000 Btu per hr (72 gal/hr)
Residual oil	> 5,000,000 Btu per hr (32 gal/hr)
Natural gas	>10,000,000 Btu per hr (100 Therms or 9862 cf/hr)
Solid fuel	> 3,000,000 Btu per hr
Used oil fuel	> 3,000,000 Btu per hr (19 gal/hr)
Landfill gas	> 3,000,000 Btu per hr (180,000 cf/hr)

Fuel burning units can be combined as one emission unit if each individual unit is of the same type and is smaller than the threshold listed above.

CAUTION: Once the sum of your combustion units exceed the threshold for reporting, you must report on ALL sources of combustion at your facility. No combustion sources are below the threshold. Combine combustion units under 3 MMBTU together as one emission unit.

**CAUTION: FOR
ELECTRONIC
FILERS WITH NEW
PROCESS
EMISSIONS UNITS
SINCE THEIR LAST
SOURCE
REGISTRATION**

How many versions of
this form do paper
filers have to submit?

You must create a new emission's unit form for any new emission unit. If you have not already created the new emissions unit, prior to submitting your complete source registration; you must create a new eDEP partial AQ Source Registration package for that emission unit. Once you have submitted the package you are working on:

- Return to "Start New",
- Select "AQ Source Registration Package";
- In SR Overview Form: B.1: Amend a Source Registration,
- Select "Check here to add new units:"
- Follow subsequent instructions

Repeat filers: Only submit one form for each emissions unit added since your last source registration. All other reporting will be done on the "side –by –side" form that MassDEP will send you.

First time filers: Submit one form for each boiler or internal combustion engine (*e.g., diesels or turbines*) with a rated capacity equal to or greater than the thresholds listed below:

Distillate oil	>10,000,000 Btu per hr (72 gal/hr)
Residual oil	> 5,000,000 Btu per hr (32 gal/hr)
Natural gas	>10,000,000 Btu per hr (100 Therms or 9862 cf/hr)
Solid fuel	> 3,000,000 Btu per hr
Used oil fuel	> 3,000,000 Btu per hr (19 gal/hr)
Landfill gas	> 3,000,000 Btu per hr (180,000 cf/hr)

Each unit exceeding the threshold is considered a separate emission unit, and must be reported on it's own BWP AQ AP-1. However, fuel-burning units can be combined as one emission unit if each individual unit is of the same type and is smaller than the threshold listed above.

CAUTION: Once the sum of your combustion units exceed the threshold for reporting, you must report on ALL sources of combustion at your facility. No combustion sources are below the threshold Combine combustion units under 3 MMBTU together as one emission unit.

**CAUTION: for
electronic filers
regarding the order
in which you
complete your forms**

If this unit's emissions release point is a new "vertical release point" (stack).. You must have created and completed a BWP AQ AP-Stack form for that new stack prior to filling out this form. The MassDEP assigned DEP stack # -- SSEIS stack # is a required field.


If you do not have the stack # you will be unable to validate this form and will forced to save and exit this form. You will have to return to complete it after obtaining the DEP stack number for the replacement stack.

A. EQUIPMENT DESCRIPTION

Note: In general the information requested below will be prepopulated from MassDEP's SSEIS database. However, certain data submitted to MassDEP on paper AP forms was not historically stored in SSEIS. That data will not appear on the electronic forms until it has been submitted in this new format.

With certain exceptions, which will be noted, the facility can edit any information listed below.

. TIP If you obtained a plan approval for the emission unit(s) you are reporting on you will have received two documents from MassDEP: 1) a plan approval letter and 2) a copy of the permit application that you submitted to MassDEP. It will be easier to fill out the Source Registration forms if you refer to those two documents

1. Facility Identifiers
 - a. Facility Name
For electronic filers: This will be prepopulated from the information on your BWP AQ SP-SR Form.
 - b. DEP Account number
 **Note:** You cannot change your facility name on this form. To change your name you must contact your MassDEP Regional Office FMF Data Manager
 - c. Facility AQ Identifier – SSEIS ID

Special instructions for paper filers: If your facility has submitted previous source registrations: You must use the same name, DEP Account number and SSEIS ID that you are reporting on your side-by-side computer printout.

- How does the new emission unit numbering system compare to the Side-by-Side system?**
On the old Side-by-Side form, individual “emission units” were called “points”. The DEP number (2.c) below is the point number from the old forms. Points were assigned to “stacks” whether there existed an actual stack or not. The new system is organized around the emission units (points). Stacks are only assigned to a point if they are an actual vertical stack (such stacks keep their old stack number).

eDEP allows you to change the name (2.a) and give your own number (2.b) to each emission unit. MassDEP keeps track of the units by the DEP number (2.c), and therefore you cannot change it.

2. Emission unit identifiers
 - a. Facility's choice of emission unit name - edit as needed.

A unique name of your choice that will allow you to recognize this unit on future reports
 - b. Facility's emission unit number / code – edit as needed.

A unique number or code of your choice that will allow you to recognize this unit on future reports.
Example: Boiler #1, Emergency Generator #2, Fire Pump #3 etc.

For electronic filers: If this is an existing emissions unit the information will be prepopulated
For paper filers: This information will be on your “Side by Side” Form.
 - c. DEP emissions unit # - old SSEIS point #

If this is a new Emissions Unit Leave blank – MassDEP will assign this number.
If this is an existing Emissions Unit, the information will be prepopulated for existing emissions units. Only use this form for new emissions units.

This is an unique number assigned by MassDEP that allows MassDEP to recognize the unit on future reports
 - d. ORIS id # – for large electrical generators only
For electronic filers: this information will be populated from the BWP AQ SR form
For paper filers: use the number reported on the BWP AQ SR form
 - e. Combined units - enter number of individual units
Total number of individual units combine on this AP-1

- What are combined units / when can fuel burning equipment be combined as one emission unit?**
Fuel burning units can be combined as one emission unit if **each** individual unit is of the same type **and** uses the same fuel(s) AND is below the following thresholds:
 - Distillate oil -- 10 MBTU per hour or 72 gal per hour;
 - Residual oil – 5 MBTU per hour or 32 gal per hour;
 - Natural gas – 10 MBTU per hour or 100 Therms per hour;
 - Solid fuel – 3 MBTU per hour;
 - Used oil fuel –3 MBTU per hour or 19 gal per hour;
 - Landfill gas – 3 MBTU per hour or 180,000 cf per hour

3. DEP Air Quality
Approvals

■ **Note:** Some emission units will not have plan approvals because they were “permitted by rule” – installed in accordance with the provisions of 310 CMR 7.03, they are below the threshold for which a plan approval or permit is required, or they were installed before the effective date of the regulation.

If a plan approval is required: Write the number for the plan approval that allowed the installation of the emission unit. This number is found on the letter sent by MassDEP that informed you that they approved the unit.

What if the emission unit has more than one MassDEP approval?

Cite the most recent plan approval that includes specific requirements applicable to this emission unit. Do not cite an approval that sets a general requirement for the facility as a whole, unless it also establishes specific conditions for this emission unit. Approvals that apply facility wide are cited on the AP-TES form. Similarly do not cite your most recent Air Operating Permit if you have one unless a more stringent limit is established in the operating permit for the emission unit. Usually the Air Operating Permit is a compilation of requirements included in other plan approvals or applicable regulations.

■ **Note:** that a particular plan approval may be cited more than once in the package or on a form. For example a plan approval that includes specific requirements for more than one emission unit will be cited on the AP form for each emission unit it covers. Similarly if a plan approval specifies conditions for the emission unit and for the monitor, raw material, fuel, and/or air pollution control device it will be cited on each applicable question on the emission unit form.

a. Most recent approval
number

Most recent plan approval or emission control plan or restricted emission status (excluding the facility's “Air Operating Permit”) number applicable to this unit, from MassDEP plan approval letter.

b. DEP approval date
(mm/dd/yyyy)

Date of most recent plan approval or emission control plan or restricted emission status (excluding the facility's “Air Operating Permit”) applicable to this unit, from MassDEP plan approval letter

4. Is this unit exempt
under CMR 7.02
Exemptions from Plan
Approval?

Check the appropriate box

5. If exempt from Plan
Approval, indicate reason
why (cite specific
MassDEP AQ
Regulation)

If 4 is yes, then a response is required. If no, then skip to Question 6.

6. Emission unit installation and decommission dates

Provide the requested dates in the appropriate lines. If the unit was installed many years ago and you do not know the exact date use your best approximation

a. Installation dates – estimate if unknown (mm/dd/yyyy)

b. Decommission dates – If applicable (mm/dd/yyyy)

Complete only if the unit was shutdown permanently or replaced since the last report.

How / when to delete a unit?

Enter a decommission date in 6.b if the unit is being **permanently taken out of service**. If the decommissioned unit operated in the year of record, the emissions from that unit must be included in this Source Registration Package. Therefore units "decommissioned" in this package will remain on the list of emission units for this year of record. They will NOT appear on the NEXT source registration package however.

7. Emission unit replacement

a. Is this unit replacing another emission unit?

Check the appropriate box, yes or no. If Yes, then complete 7.b.

b. DEP's emission unit number and facility unit name.

Paper filers: Enter the facility's emission unit name from field 2a and facility's emission unit number/code from field 2b. Leave the DEP number blank, MassDEP will assign it when the record is updated.

How to be sure the unit being replaced appears in this menu?

Line A.7.b. " DEP's emission unit number and facility's name for emission unit" are mandatory fields when the "yes" box is checked. However the unit being replaced **will not appear as a choice** on the drop down menu **until it is decommissioned**. You will not be able to complete and validate the AP form for a replacement unit until you have first entered a decommission date and completed and validated the AP form for the unit it is replacing. If this unit is replacing another unit that has not been "decommissioned", you must 1) save and exit this form, 2) open the AP form for the unit being replaced, 3) enter the decommission date, 4) complete and validate the form before you can complete this AP Form.

What if one emission unit is replacing more than one unit?

If one new emission unit is replacing several units, pick one of the units being replaced on the pick list and note the others in Section C Notes and Attachments

8. Additional reporting requirements

Check the appropriate boxes to report on the existence of any reporting requirements other than source registration for this emissions unit and the frequency of that reporting.

?Note: If this emission's unit is included in any facility wide reports, then those reports must be identified on each AP form for each emission's unit included in the facility wide report

a. Are there other reporting air quality reporting requirements for this emission unit?

If yes, specify reporting frequency in 8.b.
If no, skip to Question 9.

b. Reporting frequency – check all that apply:

Monthly, Quarterly, Semi-annual, Annual, RES
(Include Operating Permit and Plan Approval reports, but not exceedance reporting)

How to report on combined units?

For combined units, enter the total number of individual burners, the sum of the maximum input ratings of all burners, the most representative manufacturer, model number, burner type, and installation date.

9. Equipment

a. Type

Check the appropriate box for the type of combustion equipment:

- Boiler:
- Furnace:
- Engine:
- Other: If "other" enter description:

Any combustion unit including "furnaces" that generate steam or hot water for power generation
Do not check "furnace" if the unit also has a boiler
Internal combustion engines only
e.g. dryers, kilns, evaporators

What to do if data unknown or not available?

Do not leave blank: if date or numeric field – estimate; for other fields enter UNKNOWN if unknown.

b. Manufacturer

Firm that built the unit, information can be usually found on metal plate on unit.
Do not leave blank: enter unknown if unknown

Provide the requested information for the entire combustion unit

c. Model number

Information can be found on metal plate on unit.
Do not leave blank: enter unknown if unknown

Provide the requested information for the entire combustion unit

d. Maximum input rating
MMBtu/hr

Maximum rated capacity regardless of permit limitations, information can be found on metal plate on unit.
Do not leave blank: estimate if unknown

Enter the maximum rated capacity regardless of permit limitations. Do not leave blank: estimate if unknown

Tip: The manufacturer's maximum input rating is located on a metal plate on the unit. It is usually expressed in BTU per hour or gallons per hour for engines.

e. Number of burners

Provide the requested information for the entire combustion unit

f. Type of burner

Check the appropriate box, provide a description if checked other

-Rotary Mechanical atomizer, - Steam atomizer, - Air atomizer,
- Traveling grate, - Hand fired, -Other: If "other" enter "Other" burner type.

g. Burner manufacturer

Provide the requested information for the burners

h. Burner model number

Do not leave blank: estimate if unknown

i. Burner installation date
(mm/dd/yyyy)

10. Hours of operation for the emission unit:	Report on typical operation	
a. Check if typically continuously operated - 24 x 7 x 52		
b. Number of hours per day	Typical operation Acceptable range: 0-24	
c. Number of days per week	Typical operation Acceptable range: 0-7	
d. Number of weeks per year	Typical operation Acceptable range: 0-52	
e. Percent of time emissions unit is operated each calendar quarter:	Actual percent of total annual operations that occurred in each season (e.g. 40% in Q1, 30% in Q2, 20% in Q3 and 10% in Q4) unit operated	
Sum of Q1+Q2+Q3+Q4 must = 100% (or 0%, if the unit was not operational for any quarter).	Q1 is January – March Q2 is April - June Q3 is July – September Q4 is October - December	
11. Ozone season schedule – May 1 through September 30:	Actual operation during this period	
a. Ozone season hours per day	Typical operation Acceptable range: 0-24	
b. Ozone seasons days per week	Typical operation Acceptable range: 0-7	
c. Weeks operated in ozone season	Typical operation Acceptable range: 0-22	
12. Emissions release point - select	Select the appropriate type of stack or release point Non-Stack Release Points:	Physical Stacks
	-Fugitive -Horizontal	-Vertical
	-Gooseneck -Downward facing vent	- Vertical with rain cap/sleeve

**What is a release point?
What is the difference
between stacks and
non-stacks?**

The Emission Release Point is the physical structure through which the emissions leave the facility and reach the ambient air. In the previous data system, ALL release points including downward facing and horizontal vents, goosenecks, and fugitive releases were considered "stacks". In the new database, **only vertical release points are considered "stacks"** with assigned DEP and Facility stack numbers and an AP-STACK form.

If the unit has a physical stack, you must link the unit to that stack in question A.13.

?Note: If you have installed a new stack it will not populate the dropdown unless you first complete and validate an AP-STACK form prior to opening this AP-1. To complete the AP-STACK form, "SAVE AND EXIT" this AP-1 form, open, complete, and validate the AP-STACK form of the new stack, and then return to this form.

13. Link this unit to a physical stack (if applicable) - Pick from the list below.

Facility's stack identifier from Stack form – to change stack name use Stack form
If the stack for this unit is not listed, save and exit this form now and complete a new Stack form **before** completing this form.

CAUTION: for electronic filers:

- If the emission release point in Question #12 is vertical or vertical rain cap and the equipment, in Question #9, is a boiler or furnace, then this is a required field.
- If this unit's emissions release point is a new stack, you must have created and completed a BWP AQ AP-Stack form for that new stack, prior to filling out this form. If you do not have the stack #, you will be unable to validate this form; and will forced to save and exit the form. Once you have created, completed, and validated the new stack form, then you may return to complete the AP1 form.

14. Are there air pollution control devices on this emissions unit?

Check the appropriate yes or no box.
If no skip to question 15

If yes, answer a through i for each piece of air pollution control equipment associated with the emission's unit in a separate column.

?Note: If other emissions units use the same air pollution control equipment, also report this information on the appropriate BWP AQ AP-1 or BWP AQ AP-2 forms for those units

How to delete an air pollution control device?

Delete an air pollution control device (APC) by entering a date in Decommission Date (A.14.h). Use this when you are removing the device permanently.

To replace a device: if the APC device was replaced in kind with a new model, enter the new installation date and replace the information on lines a-i, as necessary. Do not enter a "decommission date"– the MassDEP database tracks the change to the APC equipment automatically.

a – e. Air pollution control device (description)

- | | |
|-----------------------------|-----------------------------------|
| a. Type (Use The Pick List) | c. Model Number |
| b. Manufacturer | d. Facility's Id For This Devise. |

What to do if you don't know the date?

Provide your best approximation of the date if you do not know it.
Do not leave blank

e – h. Air pollution control equipment dates and approval numbers:

e. Installation date (mm/dd/yyyy) if unknown enter your best approximation

f. MassDEP approval number (most recent) **?Note:** not all air pollution control devices require plan approvals

g. MassDEP approval date (mm/dd/yyyy)

h. Decommission date (mm/dd/yyyy)

i. Percent overall efficiency – enter for all pollutants that the device was designed to control:

The *Percent Overall Efficiency* calculated based on the APC equipment's Capture Efficiency (the percentage of the emissions that reach the air pollution control unit) x APC equipment's *Control Efficiency* (the percentage of the emissions that are removed from the air stream by the Air Pollution Control Equipment.)

- If you have stack-testing data on control efficiency: Use that information.
- If you do not have stack-testing data: Use the manufacturer's suggested control efficiency. This is usually expressed as a range of percentages (e.g., 90% -97%). Use the upper end of the range.

What is the % overall efficiency?

The % overall efficiency for a device equals its ("% capture efficiency" X "% control efficiency"). **It is critical for the automatic emissions calculations.** This information can be found in the plan approval application, MassDEP's approval for the device and/or in the manufacturer's specification for the device.

PM 10	VOC	HYC
PM 2.5	NO2	Hg
SO2	NH3	Pb
CO	HOC	

Other: List any substances not already listed on the form that you are required to control per your plan approval, operating permit, or applicable regulation. Only one "Other" is available for each APC device.

15. Is there monitoring equipment on this emissions unit?

Answer Yes or No, as appropriate. If no, skip to question B. Fuels and Emissions

?Note: report on each monitor that is on the release point for this emissions unit in the separate columns provided.

?Note: If other emissions units use the same release point, also report this information on the BWP AQ AP-2 or AP-3 form for those units

How to delete a monitor?

Delete a monitor by entering a date in Decommission Date (A.15.h). Use this when you are removing the monitor permanently.

How to replace a monitor?

If the monitor was replaced in kind with a new model, enter the new installation date and replace the information on lines b-i as necessary. Do not enter a "decommission date" – the MassDEP database tracks the change to the monitor equipment automatically.

a. Monitor type:

Check the appropriate box for the type of monitoring device. Check only one for each monitor (use another column if there are other types of monitors on the release point.)

CEMs,
Opacity
Other

If other: is checked then Describe "other" is required.

How do I use CEM data?

If you are a facility that determines annual emissions from CEMS, report the CEMS emissions value on your Source Registration form.

How do I use Part 75 reported values?

If you are a large facility subject to reporting annual emissions under EPA's regulation 40 CFR Part 75, you must report the same value that you reported to EPA. See AP-1 Section B.2. below.

b. Manufacturer:

The name of the manufacturer of the monitoring equipment attached to the stack and the model number assigned by the manufacturer.

c. Model number:

- d. Monitor ID #: The unique ID that the facility has assigned to the monitoring device
- ?Note:** for facilities that report under 40 CFR 75: use 3-digit monitoring system ID as your facility ID number
- e. Installation date: For facilities that report under 40 CFR 75: use the "First Date System Reported Data" as the installation date
- f. DEP approval #: From your permit or plan approval
- g. DEP approval date: (mm/dd/yyyy)
- h. Decommission date: For facilities that report under 40 CFR 75: use the "Last Date System Reported Data" as the decommission date. (mm/dd/yyyy)
- i. Recorder Whether or not this device is attached to the monitor
- j. Audible alarm
- k. Data System Whether or not a data system that continuously logs monitoring data for future review is attached to the monitor
- What is a "data system"?** A data system continuously captures monitoring data for future review and analysis.

- l. Monitored pollutants Check the contaminants that are monitored by the monitoring device:
- | | | | |
|-------------------|---|--------|---------|
| PM 10 | VOC | Oxygen | Opacity |
| PM 2.5 | NO2 | CO2 | |
| SO2 | NH3 | H2S | |
| CO | Mercury | HCL | |
| Other – describe: | List any substances not already listed on the form that you are required to monitor per your plan approval, operating permit, or applicable regulation. | | |

B.. FUELS AND EMISSIONS

?Note: In general the information requested below will be prepopulated from MassDEP's SSEIS database. However, certain data submitted to MassDEP on paper AP forms was not historically stored in SSEIS. That data will not appear on the electronic forms until it has been submitted in this new format.

With certain exceptions, which will be noted, the facility can edit any information listed below.

1. Fuel Name / Characteristics:

- Fuel Name: your choice of a unique name for this fuel
- Fuel #: your choice of a unique number or code for this fuel

How does eDEP handle multiple fuels?

In eDEP, a separate Section B form is automatically created for each additional fuel on record used in the emission unit. If you added a new fuel, or ceased using a specific fuel, check the appropriate boxes to indicate the change.

In the SSEIS side-by-side paper system, each fuel was a "segment" and the MassDEP fuel number corresponds to the old SSEIS segment number.

Add a New Fuel

Check the box if you need to add a fuel that you did not report on previously (eDEP will add a blank Section B form to your package. when you validate this form.)

Delete this fuel:

Check the box if you stopped using this fuel in this emission unit. You must still report for this year of record even if amount is "0" – the fuel will be removed the unit in the next report cycle.

a. Source Classification Code (SCC)

The SCC code is an EPA code for the type of unit operation or production process or fuel. EPA's AP-42 (<http://www.epa.gov/ttn/chieff/codes/>) contains the codes for each type of process, as well as, emission factors that can, in certain circumstances, be used to calculate emissions from each unit

For electronic filers: the system will automatically fill in the code description when the form is validated.

For paper filers: Write in the description

How does eDEP use Source Classification Codes (SCC)?

The SCC you select will be used to supply the emission factors for the automatic emissions calculation feature included in the eDEP system. The list of SCC valid in eDEP can be found at: <http://www.epa.gov/ttn/chieff/codes/>.

If the SCC code listed on the form **is wrong**, or the form will **not accept the SCC** you are entering, contact MassDEP at air.quality@state.ma.us.

b. Type of fuel – check one:

Check the box for the type of fuel burned in this unit:

No. 2,	No. 6,	Coal,	Jet fuel,
No. 4,	Diesel	Natural gas	Other: Describe

?Note: If multiple types of fuel are used in this emission unit, prepare a separate Section B for each type of fuel used. Above in "Add a New Fuel" there is a check box to add additional forms for each fuel used

c. Sulfur content for oils and coal: Acceptable Range (0 – 2.2)

The percentage of sulfur by weight for oil and coal, only.

.TIP: This is determined by analysis of a fuel sample or can be found on the receipt from your fuel dealer.

d. Ash Content for oils and coal (Acceptable Range (0 – 10))

The percentage of ash content by weight for oil and coal, only.

.TIP: This is determined by analysis of a fuel sample or can be found on the receipt from your fuel dealer.

e. Maximum hourly fuel rate for all firing burners:

The maximum fuel that all burners in this emission unit can fire in one hour, and the units of measurement from the pick list (*e.g., gallons per hour, tons per hour, million cubic feet per hour, etc.*)

- Amount
- Units per hour

If your units are not on the pick list email air.quality@state.ma.us

Units must match the SCC – you must pick the unit from the drop menu associated with the chosen SCC. If you select incorrectly, the system will indicate the correct value after you validate.

Remember to check that your Amount matches the correct units. For example, you may need to express a firing rate of 72 gallons/hr as 0.072 1000 gallons/hr when you select an SCC code for liquid fuel.

f. Do you have fuel usage restrictions?

These would have been expressed in the plan approval you received from MassDEP for this emission unit. Check the appropriate yes or no box. If No, then skip to Question 2.

If the same restrictions also apply to other emission units, report the restrictions on those emission unit forms, as well.

Cite the most recent fuel use restriction applicable to the fuel as it is used in this emission unit. The most recent fuel use restriction may be found in a regulation, an approval that applies only to this emission unit, or one that applies to several emission units, or the facility as a whole.

What if I have multiple unit fuel restrictions and multiple approvals?

If a restriction applies to multiple units then list it here and on the forms for each other unit to which it applies.

g. DEP approval number for fuel restrictions: most recent for this fuel.

Obtain this from your plan approval letter

Cite either plan approval or regulation

What if the restriction is mentioned in multiple approvals?

Enter the approval number for the approval where the restriction was first established.

h. Annual usage restriction (amount or hours) for this fuel:

Provide the maximum amount of fuel, you are allowed to use in a year per your permit, and the units of measurement from the drop down list. Obtain this from your plan approval letter

Quantity
Units

If your units are not on the pick list email air.quality@state.ma.us

What if the restriction is mentioned in multiple approvals?

Enter that same quantity here and on the forms for each other unit to which it applies.

i. Short term fuel usage restriction (amount or hours) For this fuel:

Provide the maximum amount of fuel, you are allowed to use over the short term period specified in your plan approval. Obtain this from your plan approval letter

Quantity
Units

Choose the units of measurement from the drop down list. If your units are not on the pick list email air.quality@state.ma.us

• Per:

Check the appropriate box for the time period: Month, Week, Day or Hour.

2. Annual usage:

a. Amount –year of record

The amount of fuel used in this emission unit during the calendar year being reported, and the units of measurement from a drop down menu. Enter "0" if fuel not used in the year of record.

b. Units

IF your units are not on the pick list email air.quality@state.ma.us

c. Total annual usage for prior year of record – eDEP only

For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information
For new emission units this section is not applicable

3. Total emissions for this fuel
only tons per year:

Provide the following information for all pollutants emitted by the emission unit

PM10	SO2	CO	NH3
PM2.5	NO2	VOC	
Other:	Describe		

Calculations: Read First

The form will automatically calculate the actual and potential emissions unless you check a box to manually enter emissions for each specific pollutant

**Why you may want to
calculate your own emissions
values?**

The form will calculate emissions from your annual throughput, control efficiencies that you have entered for this unit, and EPA default emission factors. To calculate your own emissions, check the box next to each pollutant's name (eDEP will calculate the emissions for any pollutant where you do not check the box).

The EPA emission factors are generic and conservative – they may overestimate your emissions. Because they are generic, the EPA SCC emission factors are not applicable in all situations. They may overstate emissions for facilities subject to certain BACT (Best Available Control Technology) requirements or RACT (Reasonably Available Control Technology). Please see the instructions for more guidance on calculating your own emissions (<http://mass.gov/dep/service/compliance/sr.htm>).

Actual (in Tons) for previous
year - eDEP only:

For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information
For new emission units this section is not applicable


What are "actual emissions"?

Actual emissions are an estimate of the total tons of each pollutant emitted by the emission unit during the year covered by the report (the year of record). They are the sum of the emissions associated with each fuel. eDEP will calculate the total actual emissions from the emissions from each fuel, unless you have checked the box next to the pollutant. Please see the instructions for more detailed information on calculating actual emissions (<http://mass.gov/dep/service/compliance/sr.htm>).

Actual (in Tons) for year of
record

For electronic filers: Put a check in the appropriate box if you choose to calculate the emissions from this fuel yourself. Otherwise the system will calculate this information for each pollutant except for those that you put a check in the box.

For paper filers: You must calculate this information. (See Appendix C for these calculations)

 **Note:** In many cases emission factors found in EPA's AP-42 (<http://www.epa.gov/ttn/chief>) can be used to estimate actual emissions.

CAUTION: The AP-42 emission factors are generic. Therefore they are not appropriate for facilities that are subject to certain BACT (Best Available Control Technology) requirements or RACT (Reasonably Available Control Technology) requirements such as NO_x RACT for boilers. Facilities subject to RACT or BACT must use the emission factors determined through stack testing or the permitting process because AP-42 will overstate emissions,

?Note: For facilities that also report under 40 CFR 75: If the unit reports SO₂ or NO_x under 40 CFR 75 monitoring provisions, on an annual basis, then the total emissions for all fuels reported here should equal that reported under 40 CFR 75.

How do I use CEM data?

If you are a facility that determines annual emissions from CEMS, report the CEMS emissions value on your Source Registration form.

**How do I use Part 75 reported
values?**

If you are a large facility subject to reporting annual emissions under EPA's regulation 40 CFR Part 75, you must report the same value that you reported to EPA.

Potential emissions (in Tons) at maximum capacity uncontrolled

Potential emissions are the maximum allowable emissions under the terms of the applicable plan approval, or, if no plan approval is required, under the applicable regulations assuming the facility operates at maximum capacity 24 hours per day, seven days a week or to the limit expressed in the regulations.

CAUTION: Pay close attention to the “potential emissions” calculations, because **potential emissions help to define the regulatory requirements to which your facility is subject**. For example, if your facility-wide potential emissions exceed the major source thresholds **①** for any air contaminant including HAPs **①**, you are required to obtain an air operating permit pursuant to 310 CMR 7 Appendix C, or to restrict your emissions through a federally enforceable permit (RES) pursuant to (310 CMR 7.02(9)). Contact your MassDEP regional office if you exceed a major source threshold and you have not filed an application for an air operating permit or a RES. The names and addresses of the Regional Offices are listed in Appendix F.

What are potential emissions at max capacity uncontrolled?

The emissions resulting from the maximum operation of the equipment irrespective of any regulatory restrictions. **(8760 hrs X Max Firing Rate X Emission Factor)**

?Note: this is not the limit imposed by any regulation, RES, or approval – please enter such restricted limits under “Maximum allowed emissions” below.

Maximum allowed emissions (in Tons) - annual:
Maximum allowed emissions (in Tons) - short term:
Short term period (or MMBtu)

Provide this information if there is a plan approval or a regulation for this fuel type (as opposed to for the emission unit as a whole)

When to enter maximum allowed emissions?

Complete the “maximum allowed emissions” fields if there is an annual or short term emission limitation **applicable to the fuel** expressed in either a MassDEP approval or a regulation. Be sure to enter the approval number or regulation under “Basis” below

Basis: DEP approval number or regulation:

Provide either the regulatory citation if the emission unit was installed through a permit by rule or the plan approval number.

?Note: Some emission units will not have plan approvals because they are:

- 1) “Permitted by rule” – installed in accordance with the provisions of 310 CMR 7.03,
- 2) Below the threshold for which a plan approval or permit is required, or
- 3) Installed prior to the effective date of the regulation.

If a plan approval is required: Write the approval number for the plan approval that approved the installation of the emission unit/segment. This number is found on the letter sent by MassDEP that informed you that they approved the unit.

If a plan approval is not required: Cite the regulation under which the equipment was installed.

Emission factor

For electronic filers: Provide this information only if you are calculating the emissions yourself
For paper filers: Provide this information

Emission factor units in pounds per unit:

?Note: In many cases, emission factors found in EPA's AP-42 (<http://www.epa.gov/ttn/chief>) can be used to estimate actual emissions.

What are emission factors?

Emissions factors are the **amount of pollution generated per unit of operation**. For fuels, total tons of emissions are obtained by multiplying **[EF in #/fuel unit] x [fuel usage] x [conversion to tons] = TPY of emissions**. If you allow eDEP to calculate your emissions, this field will be filled with EPA default emission factors based on the SCC. If you choose to calculate your own emissions, you must enter the emission factor that you used.

The EPA emission factors used by eDEP can be found at:
<http://mass.gov/dep/service/compliance/sr.htm>

Because they are generic, the EPA SCC emission factors are not applicable in all situations. They may overstate emissions for facilities subject to certain BACT (Best Available Control Technology) requirements or RACT (Reasonably Available Control Technology).

The instructions provide more information about using emissions factors to calculate emissions (<http://mass.gov/dep/service/compliance/sr.htm>).

4. Ozone season emissions – May 1 through September 30:

- a. Typical day VOC emissions –
pounds per day
- b. Typical day NOx emissions –
pounds per day

What if I have more than one fuel?

Check to enter your own values

Ozone season calculation options:

This form automatically calculates an estimate of the ozone season emissions for this emission unit using the data you provided on ozone season operation and some simplifying assumptions. If you wish to report a more precise value based on your own calculations and data, check the box below the blank lines at 4.a. and 4.b.

?Note: If you have more than 1 fuel, **this space on the form is blank** – you will be provided with a space for entering ozone season emissions in Section D, after you have entered the throughput and emissions data for each of your fuels.

?Note: The form will estimate the ozone season emissions for you. However, you may enter your own values by checking the boxes

C. NOTES AND ATTACHMENTS

This section is to identify any explanatory material the facility is choosing to submit along with this form

If the material can be sent electronically, check the box for the appropriate form


If paper information must be submitted, list the titles of the documents being submitted on the lines provided

?Note: You must click <validate> now to move on to the next part of the form or to create additional Section B's and then to create Section D: total emissions for emissions unit. The system will force you to make any necessary corrections

Once you have made all of the required corrections you will be returned to the <Related Forms Transaction ID page> to continue your work on this emissions unit, click on the <AQ AP1 Sec B (or D) form> you see listed under the form, you were just working on

D. TOTAL EMISSIONS FOR EMISSIONS UNIT

The Actual, Potential and, if applicable, Permitted emissions from this unit for each listed air contaminant during the calendar year being reported.

1. Total Emissions for this emission unit in tons per year	Calculations: This form calculates this unit's total actual and maximum potential emissions (if you have correctly provided all of the emissions for each fuel in Section B). Return to Section B if you need to correct those numbers.
What are total emissions for this emission unit?	<p>This form automatically calculates the total actual and maximum potential emissions of each pollutant from this emission unit. It calculates these values from the data you entered for each fuel.</p> <p>Please enter any emission limits that apply to the unit as a whole (regardless of fuel) under "Permitted" below.</p>
Actual (in Tons) for previous year	<p>For electronic repeat filers: this information will be provided by the system</p> <p>For paper filers: you do not need to provide this information</p> <p>For new emission units this section is N/A</p>
Actual (in Tons) Emissions	<p>The actual emissions for the calendar year being reported</p> <p>For electronic repeat filers: this information will be provided by the system</p> <p>For paper filers: You must calculate this by summing the actual emissions from each of your Section Bs for this emissions unit.</p>
Potential emissions (in Tons) at maximum capacity:	<p>For electronic repeat filers: This information will be calculated by the system</p> <p>For paper filers: Calculate this information by summing the potential emissions from your Section Bs for this emissions unit</p>
Maximum allowed emissions (in Tons) – annual	<p>Maximum annual emissions allowed pursuant to your permit or plan approval.</p> <p>These questions only apply if this entire emission unit is subject to a plan approval or permit that restricts operations or emissions. Permitted emissions equal potential emissions for facilities with operating restrictions.</p>
Maximum allowed emissions (in Tons) - short term	<p> Note: Some emission units will not have plan approvals because they are "permitted by rule" – installed in accordance with the provisions of 310 CMR 7.03, they are below the threshold for which a plan approval or permit is required, or they were installed prior to the effective date of the regulation.</p>
Short term period:	
Basis – DEP approval number or regulation:	<p>If a plan approval is required: write the approval number for the plan approval that approved the installation of the emission unit/segment. This number is found on the letter sent by MassDEP that informed you that they approved the unit.</p> <p>If a plan approval is not required: Cite the regulation under which the equipment was installed.</p>
When do I complete the "permitted" emission fields?	Complete the "permitted" field if there is an annual or a short-term emission limitation applicable to the emission unit as a whole expressed in either a MassDEP approval or a regulation. Be sure to enter the approval number or regulation under "Basis" below.
What if a restriction applies to multiple units?	Then list it here and on the forms for each other unit to which it applies.

2. Ozone season schedule - May 1 through September 30:
- Ozone season calculation options: This form automatically calculates an estimate of the ozone season emissions for this emission unit using the data you provided on ozone season operation and some simplifying assumptions. If you wish to report a more precise value based on your own calculations and data, check the box below the blank lines at 2a. and 2b.
For electronic filers: The system will calculate this information on the basis of data you supplied on the form
- a. Typical day VOC emissions – pounds per day
- For paper filers: Calculate this by summing the emissions from each fuel type during hours operated during the ozone season.
- b. Typical day NOx emissions – pounds per day
- ?Note:** If you have more than 1 fuel, you will be required to complete the ozone season emissions in Section D, after you have entered the throughput and emissions data for each of your fuels in Section B.
- ?Note:** for facilities that also report under 40 CFR 75: You **must calculate** your ozone emissions according to the following formula, and overwrite the prepopulated estimate with the result of your calculation: [Actual Ozone Season NOx emissions reported under 40 CFR 75 in tons] / [Actual number of hours operated during the ozone season] X [24 hours/day] X [2000 pounds/ton]
- Check to enter your own values
- ?Note:** The form will estimate the ozone season emissions for you. However, you may enter your own values by checking the boxes

BWP AQ AP-2 Emission Unit – Process Equipment Instructions

PURPOSE	This form describes equipment, processes, and associated air pollution emissions from non-combustion related production processes for the calendar year being reported.
WHEN IS THIS FORM APPLICABLE?	The applicability of this form depends on whether the facility is filing an electronic or paper source registration
Applicability for electronic filers	<p>This form applies to all electronic filers if your facility releases any air contaminants in excess of the reporting threshold for that air contaminant through a stack or indirectly through vents from any production process</p> <p>EXCEPT:</p> <ul style="list-style-type: none">-Fuel burning (these processes are reported on an AP-1),-Incineration (these processes are reported on an AP-3),-Organic material storage (this process is reported on an AP-4),-Insignificant activities ①. (See definition in 310 CMR 7.00 Appendix C.)
Applicability for paper filers	<p>Only Submit this form if you are a first time filer or if you are repeat filer and your facility has installed new process equipment since your last source registration and that equipment is subject to a regulatory requirement in 310 CMR 7.02, 7.03, 7.18, or is required to have a plan approval.</p> <p>If you are a first time filer and this form does not apply, write Not Applicable on the form and submit it with the rest of the package</p> <p>?Note: Existing emissions units will show up on your “Side by Side” paper report and the emissions information should be provided on that form</p>
HOW MANY VERSIONS OF THIS FORM ARE REQUIRED?	The number of versions of this form depends on whether you are filing in paper or electronically
HOW MANY VERSIONS OF THIS FORM DO ELECTRONIC FILERS HAVE TO SUBMIT?	<p>One form is required for each emission unit, including those that you have added or decommissioned since your last source registration.</p> <p>An emissions unit is as any unit operation that releases an air contaminant. Any particular production line is a series of unit operations: activities, or processes used to produce a product. A unit operation is generally a piece of equipment or a step in the production process. Identical pieces of equipment that are used interchangeably to create the same product may be reported on one form.</p> <p><i>For example, if the facility has three different coating operations, one AP-2 is required for each. However, two coating lines using the same equipment and raw materials, operated in tandem to produce the same product, can be considered one emission unit and combined on one BWP AQ AP-2.</i></p> <p>CAUTION: Once you are required to report on the emission of any air contaminant from emission unit reported on an AP-2, you must report on all operations at your facility that release that contaminant, EXCEPT “insignificant activities” ①. This may mean that your facility has additional emissions units.</p> <p>TIP: See AP-42 (http://www.epa.gov/ttn/chief) for a list of the various operations and the air contaminants they release.</p>

**CAUTION: FOR
ELECTRONIC FILERS
WITH NEW PROCESS
EMISSIONS UNITS
SINCE THEIR LAST
SOURCE
REGISTRATION**

You must create a new emission's unit form for any new emission unit. If you have not already created the new emissions unit, prior to submitting your complete source registration; you must create a new eDEP partial AQ Source Registration package for that emission unit. Once you have submitted the package you are working on:

- Return to "Start New",
- Select "AQ Source Registration Package";
- In SR Overview Form: B.1: Amend a Source Registration,
- Select "Check here to add new units:"
- Follow subsequent instructions

**How many versions of
this form do paper filers
have to submit?**

Repeat filers: Only submit one form for each emissions unit added since your last source registration. All other reporting will be done on the "Side-by-Side" form that MassDEP will send you.

First time filers: Submit one form for each emissions unit at your facility.

One form is required for each emission unit, including those that you have added or decommissioned since your last source registration.

An emissions unit is as any unit operation that releases an air contaminant. Any particular production line is a series of unit operations: activities, or processes used to produce a product. A unit operation is generally a piece of equipment or a step in the production process. Identical pieces of equipment that are used interchangeably to create the same product may be reported on one form.

For example, if the facility has three different coating operations, one AP-2 is required for each. However, two coating lines using the same equipment and raw materials, operated in tandem to produce the same product, can be considered one emission unit and combined on one BWP AQ AP-2.

CAUTION: Once you are required to report on the emission of any air contaminant from emission unit reported on an AP-2, you must report on all operations at your facility that release that contaminant, EXCEPT "insignificant activities" ⓘ. This may mean that your facility has additional emissions units.

TIP: See AP-42 (<http://www.epa.gov/ttn/chief>) for a list of the various operations and the air contaminants they release.

**CAUTION: for electronic
filers regarding the
order in which you
complete your forms**

If this unit's emissions release point is new: you must have created and completed a BWP AQ AP-Stack form for that new stack prior to filling out this form. The MassDEP assigned DEP stack # --SSEIS stack # is a required field. If you do not have the stack # you will be unable to validate this form and will forced to save your work, exit, and return to it to complete it after you have completed and validated the new stack form.

A. EMISSION UNIT – PROCESS DESCRIPTION

?Note: In general the information requested below will be prepopulated from MassDEP's SSEIS database. However, certain data submitted to MassDEP on paper AP forms was not historically stored in SSEIS and that data will not appear on the electronic until it has been submitted on the new forms. With certain exceptions, which will be noted, the facility can edit any information listed below.

TIP: If you obtained a plan approval for the emission unit(s) you are reporting on you will have received two documents from MassDEP: a plan approval letter and a copy of the permit application that you submitted to MassDEP. It will be easier to fill out the Source Registration forms if you refer to those two documents: <http://www.epa.gov/ttn/chief/ap42/index.html>

1. Facility Identifiers The name and identifying numbers of the facility or plant that is reporting.
- a. Facility name For electronic filers: This will be prepopulated from the information on your BWP AQ SP-SR Form.
- b. DEP account number **?Note:** You cannot change your facility name on this form. To change your name you must contact your MassDEP Regional Office FMF Data Manager
- c. Facility AQ identifier – SSEIS ID Special instructions for paper filers: If your facility has submitted previous source registrations: You must use the same name, DEP Account number and SSEIS ID that you are reporting on your side-by-side computer printout.

How does the new emission unit numbering system compare to the Side by Side system?

On the old Side-by-Side form, individual “emission units” were called “points”. The DEP number (2.c) below is the point number from the old forms. Points were assigned to “stacks” whether there existed an actual stack or not. The new system is organized around the emission units (points). Stacks are only assigned to a point if they are an actual vertical stack (such stacks keep their old stack number).
eDEP allows you to change the name (2.a) and give your own number (2.b) to each emission unit. MassDEP keeps track of the units by the DEP number (2.c), and therefore you cannot change it.

2. Emission Unit Identifiers

If this is a new Emission Unit: Assign the emission unit a name/number in order to uniquely identify it.
If this is an existing Emission Unit: Assign or change the emission unit name/number in order to uniquely identify it

- a. Facility's emission unit name A unique name of your choice that will allow you to recognize this unit on future reports
- b. Facility's emission unit number / code A unique number or code of your choice that will allow you to recognize this unit on future reports.
Example: Degreaser #1, Coater#3

For electronic filers: If this is an existing emissions unit the information will be prepopulated
For paper filers: This information will be on your “Side by Side” Form for existing emissions units. Only use this form for new emissions units.
- c. DEP emissions unit # - SSEIS point # If this is a new Emissions Unit Leave blank – MassDEP will assign this number.
If this is an existing Emissions Unit, the information will be prepopulated for existing emissions units. Only use this form for new emissions units.

A unique number assigned by MassDEP that allows MassDEP to recognize the unit on future reports
- d. Combined units- enter number of individual units Total number of individual units combine on this AP-2
- What are combined units / when can individual unit operations be reported as combined units?** Similar pieces of equipment that are used interchangeably to create the same product may be reported on one form as a combined emission unit. Similar pieces of equipment that are individually below the reporting threshold, which have the same applicable requirements may be reported on one form as a combined emission unit.

3. DEP Air Quality Approvals

Note: Some emission units will not have plan approvals because they were “permitted by rule” – installed in accordance with the provisions of 310 CMR 7.03, they are below the threshold for which a plan approval or permit is required, or they were installed before the effective date of the regulation.

If a plan approval is required: Write the number for the plan approval that allowed the installation of the emission unit. This number is found on the letter sent by MassDEP that informed you that they approved the unit.

What if the emission unit has more than one DEP approval?

Cite the most recent plan approval that includes specific requirements applicable to this emission unit. Do not cite an approval that sets a general requirement for the facility as a whole, unless it also establishes specific conditions for this emission unit. Approvals that apply facility wide are cited on the AP-TES form. Similarly do not cite your most recent Air Operating Permit if you have one unless a more stringent limit is established in the operating permit for the emission unit. Usually the Air Operating Permit is a compilation of requirements included in other plan approvals or applicable regulations.

Note: that a particular plan approval may be cited more than once in the package or on a form. For example a plan approval that includes specific requirements for more than one emission unit will be cited on the AP form for each emission unit it covers. Similarly if a plan approval specifies conditions for the emission unit and for the monitor, raw material, fuel, and/or air pollution control device it will be cited on each applicable question on the emission unit form.

a. Most recent approval number

Most recent plan approval or emission control plan or restricted emission status (excluding the facility's “Air Operating Permit”) number applicable to this unit, from MassDEP plan approval letter.

b. DEP approval date (mm/dd/yyyy)

Date of most recent plan approval or emission control plan or restricted emission status (excluding the facility's “Air Operating Permit”) applicable to this unit, from MassDEP plan approval letter

4. Is this unit exempt under CMR 7.02 Exemptions from Plan Approval?

Check the appropriate yes or no box

5. If exempt from Plan Approval, indicate reason why (cite specific MassDEP AQ Regulation)

If 4 is yes, then a response is required. If no, then skip to Question 6.

6. Equipment manufacturer and model number and type

Provide the requested information

a. Manufacturer

Firm that built the unit, information can be usually found on metal plate on unit.
Do not leave blank: enter unknown if unknown

b. Model number

Information can be found on metal plate on unit.
Do not leave blank: enter unknown if unknown

c. Equipment type

Describe (e.g. vapor degreaser)

7. Emission unit installation and

Provide the requested dates in the appropriate lines. If the emission unit is very old and you do not know the installation date make your best approximation

decommission dates

a. Installation dates –
estimate if unknown
(mm/dd/yyyy)

Complete only if the unit was shutdown permanently or replaced since the last report.

b. Decommission dates
– If applicable
(mm/dd/yyyy)

Enter a decommission date in 6.b if the unit is being **permanently taken out of service**. If the decommissioned unit operated in the year of record, the emissions from that unit must be included in this Source Registration Package. Therefore units "decommissioned" in this package will remain on the list of emission units for this year of record. They will NOT appear on the NEXT source registration package however.

How / when to delete a
unit?

8. Emission unit
replacement

a. Is this unit replacing
another emission unit?

Check the appropriate box yes or no.

If yes enter: MassDEP's emission unit number and facility unit name for the emissions unit being replaced by this unit

Paper filers: Enter the facility's emission unit name from field 2a and facility's emission unit number/code from field 2b. Leave the DEP number blank; MassDEP will assign it when the form is updated.

How to be sure the unit
being replaced appears
in this menu

Line A.8. " DEP's emission unit number and facility's name for emission unit" are mandatory fields when the "yes" box is checked. However the unit being replaced **will not appear as a choice** on the drop down menu **until it is decommissioned**. You will not be able to complete and validate the AP form for a replacement unit until you have first entered a decommission date and completed and validated the AP form for the unit it is replacing. If this unit is replacing another unit that has not been "decommissioned", you must 1) save and exit this form, 2) open the AP form for the unit being replaced, 3) enter the decommission date, 4) complete and validate the form before you can complete this AP Form.

What if one emission
unit is replacing more
than one unit?

If one new emission unit is replacing several units, pick one of the units being replaced on the pick list and note the others in Section C Notes and Attachments

9. Additional reporting
requirements

Check the appropriate boxes to report on the existence of any reporting requirements other than source registration for this emissions unit and the frequency of that reporting.

?Note: If this emissions unit is included in any facility wide reports, then those reports must be identified on each AP form for each emission unit included in the facility wide report

a. Are there other
reporting air quality
reporting requirements
for this emission unit?

If yes, specify reporting frequency in 9.b.
If no, skip to Question 10.

b. Reporting frequency –
check all that apply:

Monthly, Quarterly, Semi-annual, Annual, RES (include Operating Permit and Plan Approval reports, but not exceedance reporting)

10. Hours of operation

for the emission unit: Report on typical operation

a. Check if typically continuously operated - 24 x 7 x 52

b. Number of hours per day

Typical operation
Acceptable range: 0-24

c. Number Of Days Per Week

Typical operation
Acceptable range: 0-7

d. Number of weeks per year

Typical operation
Acceptable range: 0-52

e. Percent of time emissions unit is operated each calendar quarter:

Actual percent of total annual operations that occurred in each season (e.g. 40% in Q1, 30% in Q2, 20% in Q3 and 10% in Q4) unit operated

Sum of Q1+Q2+Q3+Q4 must = 100% (or 0%, if the unit was not operational for any quarter).

Q1 is January – March
Q2 is April - June
Q3 is July – September
Q4 is October - December

11. Ozone season schedule – May 1 through September 30:

Actual operation during this period

a. Ozone season hours per day

typical operation
Acceptable range: 0-24

b. Ozone seasons days per week

typical operation
Acceptable range: 0-7

c. Weeks operated in ozone season

typical operation
Acceptable range: 0-22

12. Emissions release point

Select the appropriate type of stack or release point
Non-Stack Release Points:

-Fugitive -Downward facing vent
-Horizontal -Gooseneck

Physical Stacks:

-Vertical
-Vertical with rain cap/sleeve

**What are release points?
What is the difference between stacks and non-stacks?**

The Emission Release Point is the physical structure through which the emissions leave the facility and reach the ambient air. In the previous data system, ALL release points including downward facing and horizontal vents, goosenecks, and fugitive releases were considered "stacks". In the new database, only vertical release points are considered "stacks" with assigned DEP and Facility stack numbers and an AP-STACK form.

If the unit has a physical stack, you must link the unit to that stack in question A.13.

?Note: If you have installed a new stack it will not populate the dropdown unless you first complete and validate an AP-STACK form prior to opening this AP-2. To complete the AP-STACK form, "SAVE AND EXIT" this AP-2 form, open, complete, and validate the AP-STACK form of the new stack, and then return to this form.

13. Link this unit to a physical stack (if applicable) – pick from the list below:

Facility's stack identifier from Stack form – to change stack name use Stack form
If the stack for this unit is not listed, save and exit this form now and complete a new Stack form **before** completing this form.

CAUTION: for electronic filers:

- If this unit's emissions release point is a new stack, you must have created and completed a BWP AQ AP-Stack form for that new stack, prior to filling out this form. If you do not have the stack #, you will be unable to validate this form; and will forced to save and exit the form. Once you have created, completed, and validated the new stack form, then you may return to complete the AP1 form.

14. Is there monitoring equipment on this emissions unit?

Answer Yes or No as appropriate, if no skip to question 16

?Note: report on each monitor that is on the release point for this emissions unit in the separate columns provided.

?Note: If other emissions units use the same release point, also report this information on the BWP AQ AP-1 or AP-3 forms for those units

How to delete a monitor?

Delete a monitor by entering a date in Decommission Date (A.14.h). Use this when you are removing the monitor permanently.

How to replace a monitor?

If the monitor was replaced in kind with a new model, enter the new installation date and replace the information on lines b-i as necessary. Do not enter a "decommission date"– the MassDEP database tracks the change to the monitor equipment automatically.

a. Monitor type:

Check the appropriate box for the type of monitoring device. Check only one for each monitor (use another column if there are other types of monitors on the release point.)

CEMs,	Time recorder	Other - If other: is checked then Describe
Opacity	Temperature recorder	"other" is required
Fuel flow meter	Pressure	

b. Manufacturer:

The name of the manufacturer of the monitoring equipment attached to the stack and the model number assigned by the manufacturer

c. Model number:

d. Monitor ID #:

The unique ID number/name that the facility has assigned to this piece of monitoring equipment

e. Installation date:

Estimate if unknown

f. DEP approval #:

From your permit or plan approval

g. DEP approval date:
(mm/dd/yyyy)

h. Decommission date:

i. Recorder

Whether or not these devices are attached to the monitor

j. Audible alarm

k. Data System

Whether or not a data system that continuously logs monitoring data for future review is attached to the monitor

What is a “data system”?

A data system continuously captures monitoring data for future review and analysis.

I. Monitored pollutants

Check all contaminants that are measured by the monitoring unit

PM 10	VOC	Oxygen	Opacity
PM 2.5	NO2	CO2	
SO2	NH3	H2S	
CO	Mercury	HCL	

Other– describe: List any substances not already listed on the form that you are required to monitor per your plan approval, operating permit, or applicable regulation

15. Are there air pollution control devices on this emissions unit?

Check the appropriate yes or no box.

If no skip to the question Section B

If yes, answer a through i for each piece of air pollution control equipment associated with the emission's unit in a separate column

?Note: If other emissions units use the same air pollution control equipment also report this information on the BWP AQ AP-1 or AP-3 forms for those units. If you have more than three control devices, checking the box in the left hand margin will lead you through the process of creating additional forms.

?Note: in order to create and access the new air pollution control device forms you will have to:

1. Click on validate to enter the data you have provided on this form up to this point into the system. The system will force you to correct any errors before it will create the new <AP2-APC form>. (Which will return you to the <Related Forms – Transactions ID page>
2. Click on, complete, and validate the new <AP-2 APC form> (which will return you to the <Related Forms – Transactions ID page>
3. Reopen and finish this form

How to delete an air pollution control device?

Delete an air pollution control device (APC) by entering a date in Decommission Date (A.15.h). Use this when you are removing the device permanently.

To replace a device: if the APC device was replaced in kind with a new model, enter the new installation date and replace the information on lines a-i, as necessary. Do not enter a “decommission date”– the MassDEP database tracks the change to the APC equipment automatically.

a – d. Air pollution control device (description)

a. Type from the pick list
b. Manufacturer

c. Model number
d. Control device ID # (the unique number assigned by the facility for that piece of air pollution control)

What to do if you don't know the date?

Provide your best approximation of the date if you do not know it.
Do not leave blank

e – g. Air pollution control equipment dates and approval numbers:

e. Installation date (mm/dd/yyyy)
f. DEP approval number (most recent)
g. DEP approval date (mm/dd/yyyy)

If unknown enter your best approximation

?Note: Not all air pollution control devices require plan approvals

h. Decommission date (mm/dd/yyyy)

Date equipment taken out of service

i. Percent overall efficiency – enter for all pollutants that the device was designed to control:

The *Percent Overall Efficiency* calculated based on the APC equipment's Capture Efficiency (the percentage of the emissions that reach the air pollution control unit) x APC equipment's *Control Efficiency* (the percentage of the emissions that are removed from the air stream by the Air Pollution Control Equipment.)

- If you have stack-testing data on control efficiency: Use that information.
- If you do not have stack-testing data: Use the manufacturer's suggested control efficiency. This is usually expressed as a range of percentages (e.g., 90%-97%). Use the upper end of the range.

What is the % overall efficiency?

The % overall efficiency for a device equals its ("% capture efficiency" X "% control efficiency"). **It is critical for the automatic emissions calculations.** This information can be found in the plan approval application, MassDEP's approval for the device and/or in the manufacturer's specification for the device.

PM 10	VOC	HYC
PM 2.5	NO2	Hg
SO2	NH3	Pb
CO	HOC	

Other: List any substances not already listed on the form that you are required to control per your plan approval, operating permit, or applicable regulation.
Only one "Other" is available for each APC device,

B. EMISSIONS FOR RAW MATERIALS / FINISHED PRODUCTS

Special rules for organic compounds

<p>?Note: In general the information requested below will be prepopulated from MassDEP's SSEIS database. However, certain data submitted to MassDEP on paper AP forms was not historically stored in SSEIS. That data will not appear on the electronic forms until it has been submitted in this new format. With certain exceptions, which will be noted, the facility can edit any information listed below</p>	
<p>?Note: Section B of this form must be completed for each raw material/finished product that can emit air contaminants used in this emissions unit.</p>	
If an organic compound is used in an emission unit:	Submit:
To manufacture another chemical or to make a formulation①	One Section B for each individual organic compound used in this emission unit.
As a formulation① (e.g., to paint, print, or otherwise coat a product)	One Section B is required for EACH FORMULATION used in this emission unit.
As a solvent thinner or to clean the formulation① from the processing equipment	One Section B is required for each separate solvent thinner used in this emission unit. (Note this information used to be reported with a formulation)
For degreasing	One Section B is required for EACH degreasing formulation used in the emission unit.

CAUTION: If the same raw material is used or product is produced in more than one emission unit, a separate Section B form is required for each emission unit in which the raw material is used or product is produced

How does eDEP handle multiple raw materials or finished products?

In eDEP, a separate Section B form is automatically created for each raw material or finished product on record for this emission unit. If you need to add a new raw material or finished product, or ceased using or making a specific raw material or finished product, check the boxes at the right to indicate the change. In the SSEIS side-by-side paper system each raw material or finished product was a "segment" and the DEP fuel number corresponds to the old SSEIS segment number

Add a New material/product

Check the box if you need to add a material/product that you did not report on previously (eDEP will add a blank Section B form to your package when you validate this form.)

Delete this material/product:

Check the box if you stopped using this material or making this product in this emission unit permanently. You must still report data for this year of record even if amount is "0" – the material/product will be removed the unit in the next report cycle.

1. Operation description:

a. Raw material or finished product name:

Your choice of a unique name for this raw material / finished product

b. Is material/product an input or output?

Provide the information requested

c. Process description:

A brief description of the process and the types of activities performed by equipment in the emission unit (e.g., *Cleaning – degreasing*)

Write a brief description of the process in which the raw material is used

d. SCC code - see instructions

The SCC code is a code for the type of unit operation or production process. EPA's AP-42 <http://www.epa.gov/ttn/chief/codes/> contains the codes for each type of process, as well as, emission factors that can, in certain circumstances, be used to calculate emissions from each unit process.

For electronic filers: the system will automatically fill in the code description
For paper filers: write in the description

Where do you find source classification codes (SCC)?

SCC are standard codes EPA uses to identify different operations and the associated emissions factors. The list of SCC valid in eDEP can be found at http://mass.gov/dep/service/compliance/sr.htm/Finding_SCC.htm
If the SCC code listed on the form **is wrong**, or the form will **not accept the SCC** you are entering, contact MassDEP at air.quality@state.ma.us.

e. Maximum process rate for material/product:

The maximum rate at which raw materials can be used in the emission unit, expressed in measurable units (e.g., *pounds of material or per hour or gallons per hour*) ?? Units will be on the pick list. If the units you use are not listed call MassDEP

- Amount
- Units per hour

Units must match the SCC – you must pick the unit from the drop menu associated with the chosen SCC. If you select incorrectly, the system will indicate the correct value after you validate.
Remember to check that your Amount matches the correct units. For example, you may need to express a rate of 72 gallons/hr as 0.072 1000 gallons/hr when you select an SCC code for liquid fuel.

What is the definition of maximum process rate?

The maximum rate at which the equipment **can operate** irrespective of any regulatory restrictions.

f. If organic material, give weight % of:

- VOC
- HOC
- HVC

Determine the weight percentage separately for each category of organic compound. The MSDS provided by your supplier will list the individual chemicals in the formulation.

Total **weight** percentage of:
VOCs in the formulation
HOCs in the formulation
HVCs in the formulation

Calculate the weight percentage for each category by adding the weight percent of each individual chemical in the organic compound that is in the category.

TIP: The MSDS^① provided by your supplier will list the individual chemicals in the formulation.

Note: Some formulations will contain a mixture of VOCs, HOCs, and/or HYCs. Others will just contain one of the categories.

What is the weight percentage of VOC, HOC, HYC?

Do not confuse WEIGHT percentage with VOLUME percentage. WEIGHT percentage is calculated as follows: $100 \times (\text{The weight of the HOCs, VOCs or HYCs in the formulation}) / (\text{the total weight of the formulation})$.

g. Total actual raw material used or finished product produced for year of record:

cite either plan approval or regulation

How much of the raw material was used or product was produced during the calendar year being reported and the unit of measure used

- Amount
- Units
- Amount Prior year –eDEP only
- Units prior year

Enter "0" if not used in the year of record

Units will be on the pick list. If the units you use are not listed call MassDEP

For electronic repeat filers: this information will be provided by the system

For paper filers: you do not need to provide this information

For new emission units this section is not applicable

h. Do you have raw material or finished product restrictions?

Note: Some emission units will not have plan approvals because they are "permitted by rule" – installed in accordance with the provisions of 310 CMR 7.03, they are below the threshold for which a plan approval or permit is required, or they were installed before the effective date of the regulation.

What if there are multiple raw material or finished product restrictions?

Cite the most recent raw material use or finished product restriction applicable to the raw material use or finished product associated with this emission unit. The most recent raw material or finished product restriction may be found in a regulation, an approval that applies only to this emission unit, or one that applies to several emission units, or the facility as a whole.

What if a restriction applies to multiple units?

Then list it here and on the forms for each other unit to which it applies.

i. DEP approval number for restrictions:

Only complete if a plan approval is required: State the approval number for the plan approval that allowed the installation of the emission unit. This number is found on the plan approval letter sent by MassDEP.

What if there are multiple raw material or finished product restrictions mention multiple approvals?

Enter the approval number for the approval where the restriction was first established.

If a restriction applies to multiple units then enter that same quantity here and on the forms for each other unit to which it applies.

j. Short term raw material/finished product restriction – if none, leave blank:

Provide the maximum amount of raw material/finished product, you are allowed to use over the short-term period specified in your plan approval. Obtain this from your plan approval letter

- Amount
- Units
- Per:

Choose the units of measurement from the drop down list. If your units are not on the pick list email air.quality@state.ma.us

Check the appropriate box for the time period: Month, Week, Day or Hour.

k. Annual restriction – if none, leave blank:

Provide the maximum amount of fuel, you are allowed to use in a year per your permit, and the units of measurement from the drop down list. Obtain this from your plan approval letter

- Quantity (amount or

- hours)
- Units

What if the restriction is mentioned in multiple approvals?

1. Indicate which air pollution control devices from Section A, Question 15 control this material/product by listing the facility-designated control device ID # for each unit that applies:

2. Total emissions for this raw material/product – tons per year:

If your units are not on the pick list email air.quality@state.ma.us. Enter that same quantity here and on the forms for each other unit to which it applies.

Enter the approval number for the approval where the restriction was first established.

If a restriction applies to multiple units then enter that same quantity here and on the forms for each other unit to which it applies.

List the ID for the APC Equipment.

Use the check box if all air pollution control devices on the unit apply to this material/product

What are total emissions for this material/finished product?

This section records the total actual, potential and permitted (allowable) emissions for the year covered by this report (the year of record) of each pollutant that is attributed to this raw material or finished product for this emission unit. Please see the instructions for detailed information on calculating emissions.

PM10	SO2	CO	HOC	
PM2.5	NO2	VOC	Reserved	NH3
Other:	Describe			

Actual for previous year eDEP only:

For electronic filers: this information has been filled in from prior years' source registrations
For new emissions units: this information is not applicable

Actual for year of record:

Calculate this information. The actual emissions for the calendar year being reported. **You must calculate your Actual Emissions.** (see Appendix C: Example Calculations.)

 **Note:** In many cases emission factors found in EPA's AP-42 (<http://www.epa.gov/ttn/chief>) can be used to estimate actual emissions.

CAUTION: The AP-42 emission factors are generic. Therefore they are NOT appropriate for facilities that are subject to certain BACT (Best Available Control Technology) requirements or RACT (Reasonably Available Control Technology) requirements such as NO_x RACT for boilers. Facilities subject to RACT or BACT must use the emission factors determined through stack testing or the permitting process because **AP-42 will overstate emissions.**

What are "actual emissions"?

Actual emissions are an estimate of the total tons of each pollutant emitted by the emission unit during the year covered by the report (the year of record). They are the sum of the emissions associated with each fuel. eDEP will calculate the total actual emissions from the emissions from each fuel, unless you have checked the box next to the pollutant. Please see the instructions for more detailed information on calculating actual emissions (<http://mass.gov/dep/service/compliance/sr.htm>).

Potential emissions at maximum capacity uncontrolled

Calculate this information. (See Appendix C: Example Calculations.)

Potential emissions are the maximum allowable under the terms of the applicable plan approval, or, if no plan approval is required, under the applicable regulations, assuming you operate 24 hours per day 7 days a week at maximum capacity

CAUTION: Pay close attention to the "potential emissions" calculations, because potential

emissions help to define the regulatory requirements to which your facility is subject.

For example, if your facility-wide potential emissions exceed the major source thresholds for any air contaminant including HAPs, you are required to obtain an air operating permit pursuant to 310 CMR 7 Appendix C, or to restrict your emissions through a federally enforceable permit (RES) pursuant to (310 CMR 7.02(9)). Contact your MassDEP regional office if you exceed a major source threshold and you have not filed an application for an air operating permit or a RES. The names and addresses of the Regional Offices are listed in Appendix F.

What are potential emissions at max capacity uncontrolled?

The emissions resulting from the **maximum operation** of the equipment **irrespective of any regulatory restrictions**. (8760 hrs X Max Firing Rate X Emission Factor)
?Note: this is not the limit imposed by any regulation, RES, or approval – please enter such restricted limits under “Maximum allowed emissions” below.

Maximum allowed emissions

– annual:

Maximum allowed emissions

- short term:

Short term period

Provide this information if there is a plan approval for a regulation or this raw material /product (as opposed to for the emission unit as a whole.)

When to enter maximum allowed emissions?

Complete the “maximum allowed emissions” fields if there is an annual or short-term emission limitation **applicable to the fuel** expressed in either a **MassDEP approval or a regulation**. Be sure to enter the approval number or regulation under “Basis” below

Basis: DEP approval number or regulation:

Provide either the regulatory citation if the emission unit was installed through a permit by rule or the plan approval number. If a plan approval is not required: Cite the regulation under which the equipment was installed.

?Note: Some emission units will not have plan approvals because they are:

- 1) “Permitted by rule” – installed in accordance with the provisions of 310 CMR 7.03,
- 2) Below the threshold for which a plan approval or permit is required, or
- 3) Installed prior to the effective date of the regulation.

If a plan approval is required: Write the approval number for the plan approval that approved the installation of the emission unit/segment. This number is found on the letter sent by MassDEP that informed you that they approved the unit.

Emission factor

For electronic filers: Provide this information only if you are calculating the emissions yourself
For paper filers: Provide this information

Emission factor units in pounds per:

?Note: In many cases, emission factors found in EPA’s AP-42 (<http://www.epa.gov/ttn/chief>) can be used to estimate actual emissions.

What are emission factors?

Emissions factors are the **amount of pollution generated per unit of operation**. For fuels, total tons of emissions are obtained by multiplying [EF in #/fuel unit] x [fuel usage] x [conversion to tons] = **TPY of emissions**. If you allow eDEP to calculate your emissions, this field will be filled with EPA default emission factors based on the SCC. If you choose to calculate your own emissions, you must enter the emission factor that you used. The EPA emission factors used by eDEP can be found at: <http://mass.gov/dep/service/compliance/sr.htm>.

Because they are generic, the EPA SCC emission factors are not applicable in all situations. They may overstate emissions for facilities subject to certain BACT (Best Available Control Technology) requirements or RACT (Reasonably Available Control Technology). The instructions provide more information about using emissions factors to calculate emissions
(<http://mass.gov/dep/service/compliance/sr.htm>).

3. Ozone season emissions
– May 1 through September

Ozone season calculation options:

This form automatically calculates an estimate of the ozone season emissions for this emission unit

30:

a. Typical day VOC emissions – pounds per day

b. Typical day NOx emissions – pounds per day

What if I have more than one fuel?

Check to enter your own values

using the data you provided on ozone season operation and some simplifying assumptions. If you wish to report a more precise value based on your own calculations and data, check the box below the blank lines at 3.a. and 3.b.

?Note: If you have more than 1 fuel, **this space on the form is blank** – you will be provided with a space for entering ozone season emissions in Section D, after you have entered the throughput and emissions data for each of your fuels.

?Note: The form will estimate the ozone season emissions for you. However, you may enter your own values by checking the boxes

C. NOTES AND ATTACHMENTS

This section is to identify any explanatory material the facility is choosing to submit along with this form

If the material can be sent electronically, check the box for the appropriate form

If paper information must be submitted, list the titles of the documents being submitted on the lines provided

?Note: You must click <validate> now to move on to the next part of the form or to create additional Section B's and then to create Section D: total emissions for emissions unit. The system will force you to make any necessary corrections

Once you have made all of the required corrections you will be returned to the <Related Forms Transaction ID page> to continue your work on this emissions unit, click on the <AQ AP2 Section B (or Section D) form> you see listed under the form, you were just working on.

D. TOTAL EMISSIONS FOR EMISSIONS UNIT

The Actual, Potential, and, if applicable, Permitted emissions from this unit for each listed air contaminant during the calendar year being reported

1. Total Emissions for this emission unit in tons per year:

Calculations: This form calculates this unit's total actual and maximum potential emissions (if you have correctly provided all of the emissions for each fuel in Section B). Return to Section B if you need to correct those numbers.

What are total emissions for this emission unit?

This form automatically calculates the total actual and maximum potential emissions of each pollutant from this emission unit. It calculates these values from the data you entered for each fuel.

Please enter any emission limits that apply to the unit as a whole (regardless of fuel) under "Permitted" below.

Actual (in Tons) for previous year

For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information
For new emission units: this section is N/A


Actual (in Tons) Emissions

The actual emissions for the calendar year being reported



For electronic repeat filers: this information will be provided by the system
For paper filers: You must calculate this by summing the actual emissions from each of your Section Bs for this emissions unit. .

Potential emissions (in Tons) at

For electronic repeat filers: This information will be calculated by the system

maximum capacity:	For paper filers: Calculate this information by summing the potential emissions from your Section Bs for this emissions unit
Maximum allowed emissions (in Tons) – annual	Maximum annual emissions allowed pursuant to your permit or plan approval. These questions only apply if this entire emission unit is subject to a plan approval or permit that restricts operations or emissions. Permitted emissions equal potential emissions for facilities with operating restrictions.
Maximum allowed emissions (in Tons) - short term Short term period:	 ?Note: Some emission units will not have plan approvals because they are “permitted by rule” – installed in accordance with the provisions of 310 CMR 7.03, they are below the threshold for which a plan approval or permit is required, or they were installed prior to the effective date of the regulation. If a plan approval is required: write the approval number for the plan approval that approved the installation of the emission unit/segment. This number is found on the letter sent by MassDEP that informed you that they approved the unit.
Basis – DEP approval number or regulation:	If a plan approval is not required: Cite the regulation under which the equipment was installed.
When do I complete the “permitted” emission fields?	Complete the “permitted” field if there is an annual or a short-term emission limitation applicable to the emission unit as a whole expressed in either a MassDEP approval or a regulation. Be sure to enter the approval number or regulation under “Basis” below.
What if a restriction applies to multiple units?	Then list it here and on the forms for each other unit to which it applies.
2. Ozone season schedule - May 1 through September 30:	Ozone season calculation options: This form automatically calculates an estimate of the ozone season emissions for this emission unit using the data you provided on ozone season operation and some simplifying assumptions. If you wish to report a more precise value based on your own calculations and data, check the box below the blank lines at 2a. and 2b.
a. Typical day VOC emissions – pounds per day	?Note: If you have more than 1 fuel, you will be required to complete the ozone season emissions in Section D, after you have entered the throughput and emissions data for each of your fuels in Section B. For electronic filers: The system will calculate this information on the basis of data you supplied on the form For paper filers: Calculate this by summing the emissions from each fuel type during hours operated during the ozone season ?Note: for facilities that also report under 40 CFR 75: You must calculate your ozone emissions according to the following formula, and overwrite the prepopulated estimate with the result of your calculation: [Actual Ozone Season NOx emissions reported under 40 CFR 75 in tons] / [Actual number of hours operated during the ozone season] X [24 hours/day] X [2000 pounds/ton]
b. Typical day NOx emissions – pounds per day	
Check to enter your own values	<hr/> ?Note: The form will estimate the ozone season emissions for you. However, you may enter your own values by checking the boxes


BWP AQ AP-3 Emission Unit – Incinerator Instructions

PURPOSE	This form provides MassDEP with information about the equipment, processes, and associated air pollution emissions during the calendar year being reported from the incineration of waste such as solid waste, municipal waste, medical waste, sludge, and other combustible waste materials.
WHEN IS THIS FORM APPLICABLE?	The applicability of this form depends on whether the facility is filing an electronic or paper source registration
Applicability for Electronic Filers	<p>This form applies to all electronic filers with any waste incinerator</p> <p>That is capable of reducing equal to or greater than 50 pounds of waste per hour, except incineration units used as air pollution control equipment. (Air pollution control equipment is reported on the appropriate emission unit form.)</p>
Applicability for Paper Filers	<p> NOTE: You do not have to complete a BWP AP1 for this emission unit.</p> <p>Only Submit this form if you are a first time filer or if you are repeat filer and your facility has installed new process equipment since your last source registration and that equipment is subject to a regulatory requirement in 310 CMR 7.02, 7.03, 7.18, or is required to have a plan approval.</p> <p>If you are a first time filer and this form does not apply, write Not Applicable on the form and submit it with the rest of the package</p> <p> NOTE: Existing emissions units will show up on your "Side by Side" paper report and the emissions information should be provided on that form</p>
HOW MANY VERSIONS OF THIS FORM ARE REQUIRED?	The number of versions of this form depends on whether you are filing in paper or electronically
How many versions of this form do electronic filers have to submit?	One form is required for each incinerator unit, including those that you have added or decommissioned since your last source registration.
CAUTION: FOR ELECTRONIC FILERS WITH NEW PROCESS EMISSIONS UNITS SINCE THEIR LAST SOURCE REGISTRATION	<p>You must create a new emission's unit form for any new emission unit. If you have not already created the new emissions unit, prior to submitting your complete source registration; you must create a new eDEP partial AQ Source Registration package for that emission unit. Once you have submitted the package you are working on:</p> <ul style="list-style-type: none">• Return to "Start New",• Select "AQ Source Registration Package";• In SR Overview Form: B.1: Amend a Source Registration,• Select "Check here to add new units:"• Follow subsequent instructions
How many versions of this form do paper filers have to submit?	<p>Repeat filers: Only submit one form for each incinerator unit (that is not an air pollution control device) added since your last source registration. All other reporting will be done on the "Side-by-Side" form that MassDEP will send you.</p> <p>First time filers: Submit one form for each incinerator unit at your facility.</p>

CAUTION: FOR ELECTRONIC FILERS REGARDING THE ORDER IN WHICH YOU COMPLETE YOUR FORMS

If this unit's emissions release point is new: you must have created and completed a BWP AQ AP-Stack form for that new stack prior to filling out this form. The MassDEP assigned DEP stack # --SSEIS stack # is a required field. If you do not have the stack # you will be unable to validate this form and will be forced to save your work, exit, and return to it to complete it after you have completed and validated the new stack form.

A. EMISSION UNIT—INCINERATOR INFORMATION

 **NOTE:** In general the information requested below will be prepopulated from MassDEP's SSEIS database. However, certain data submitted to MassDEP on paper AP forms was not historically stored in SSEIS. That data will not appear on the electronic forms until it has been submitted electronically.

With certain exceptions, which will be noted, the facility can edit any information listed below.

TIP If you obtained a plan approval for the emission unit(s) you are reporting on you will have received two documents from MassDEP: a plan approval letter and a copy of the permit application that you submitted to MassDEP. It will be easier to fill out the Source Registration forms if you refer to those two documents

1. Facility Identifiers


The name and identifying numbers of the facility or plant that is reporting.

a. Facility Name

For electronic filers: This will be prepopulated from the information on your BWP AQ SP-SR Form.

b. DEP Account number

c. Facility AQ Identifier -SSEIS ID

 **NOTE:** You cannot change your facility name on this form. To change your name you must contact your MassDEP Regional Office FMF Data Manager

Special instructions for paper filers: If your facility has submitted previous source registrations: You must use the same name, DEP Account number and SSEIS ID that you are reporting on your side-by-side computer printout.

How does the new emission unit numbering system compare to the Side-by-Side system?

On the old Side-by-Side form, individual "emission units" were called "points". The DEP number (3.c) below is the point number from the old forms. Points were assigned to "stacks" whether there existed an actual stack or not. The new system is organized around the emission units (points). Stacks are only assigned to a point if they are an actual vertical stack (such stacks keep their old stack number).

eDEP allows you to change the name (3.a) and give your own number (3.b) to each emission unit. MassDEP keeps track of the units by the DEP number (3.c), and therefore you cannot change it.

2. Emission Unit Identifiers

If this is a new Emission Unit: Assign the emission unit a name/number in order to uniquely identify it.
If this is an existing Emission Unit: Assign or change the emission unit name/number in order to uniquely identify it


a. Facility's emission unit name

A unique name of your choice that will allow you to recognize this unit on future reports

b. Facility's emission unit number / code

A unique number or code of your choice that will allow you to recognize this unit on future reports.
Example: Incinerator #1

For electronic filers: If this is an existing emissions unit the information will be prepopulated
For paper filers: This information will be on your "Side by Side" Form for existing emissions units. Only use this form for new emissions units.

c. DEP emissions unit # - SSEIS point #	<p>If this is a new Emissions Unit Leave blank – MassDEP will assign this number. If this is an existing Emissions Unit, the information will be prepopulated for existing emissions units. Only use this form for new emissions units.</p> <p>A unique number assigned by MassDEP that allows MassDEP to recognize the unit on future reports</p>
3. DEP Air Quality Approvals	Write the number for the plan approval that allowed the installation of the incinerator. This number is found on the letter sent by MassDEP that informed you that they approved the unit.
What if the emission unit has more than one DEP approval?	<p>Cite the most recent plan approval that includes specific requirements applicable to this emission unit. Do not cite an approval that sets a general requirement for the facility as a whole, unless it also establishes specific conditions for this emission unit. Approvals that apply facility wide are cited on the AP-TES form. Similarly do not cite your most recent Air Operating Permit if you have one unless a more stringent limit is established in the operating permit for the emission unit. Usually the Air Operating Permit is a compilation of requirements included in other plan approvals or applicable regulations.</p> <p> NOTE: that a particular plan approval may be cited more than once in the package or on a form. For example a plan approval that includes specific requirements for more than one emission unit will be cited on the AP form for each emission unit it covers. Similarly if a plan approval specifies conditions for the emission unit and for the monitor, raw material, fuel, and/or air pollution control device it will be cited on each applicable question on the emission unit form.</p>
a. Most recent approval number	Most recent plan approval or emission control plan or restricted emission status (excluding the facility's "Air Operating Permit") number applicable to this unit, from MassDEP plan approval letter.
b. DEP approval date (mm/dd/yyyy)	Date of most recent plan approval or emission control plan or restricted emission status (excluding the facility's "Air Operating Permit") applicable to this unit, from MassDEP plan approval letter
4. Emission unit installation and decommission dates	Provide the requested dates in the appropriate lines. If the unit was installed many years ago and you do not know the exact date use your best approximation
a. Installation dates – estimate if unknown (mm/dd/yyyy)	
b. Decommission dates – If applicable (mm/dd/yyyy)	Complete only if the unit was shutdown permanently or replaced since the last report.
How / when to delete a unit?	Enter a decommission date in 6.b if the unit is being permanently taken out of service . If the decommissioned unit operated in the year of record, the emissions from that unit must be included in this Source Registration Package. Therefore units "decommissioned" in this package will remain on the list of emission units for this year of record. They will NOT appear on the NEXT source registration package however.

5. Emission unit replacement

a. Is this unit replacing another emission unit?

Check the appropriate box, yes or no. If Yes, then complete 5.b.

b. DEP's emission unit number and facility unit name.

Paper filers: Enter the facility's emission unit name from field 2a and facility's emission unit number/code from field 2b. Leave the DEP number blank; MassDEP will assign it when the record is updated.

How to be sure the unit being replaced appears in this menu?


Line A.5.b. "DEP's emission unit number and facility's name for emission unit" are mandatory fields when the "yes" box is checked. However the unit being replaced **will not appear as a choice** on the drop down menu **until it is decommissioned**. You will not be able to complete and validate the AP form for a replacement unit until you have first entered a decommission date and completed and validated the AP form for the unit it is replacing. If this unit is replacing another unit that has not been "decommissioned", you must 1) save and exit this form, 2) open the AP form for the unit being replaced, 3) enter the decommission date, 4) complete and validate the form before you can complete this AP Form.

What if one emission unit is replacing more than one unit?

If one new emission unit is replacing several units, pick one of the units being replaced on the pick list and note the others in Section C Notes and Attachments

6. Are there routine air quality reporting requirements for this emission unit (other than Source Registration)?

Check the appropriate boxes to report on the existence of any reporting requirements other than source registration for this emissions unit and the frequency of that reporting.

 **NOTE:** If this emission's unit is included in any facility wide reports, then those reports must be identified on each AP form for each emission's unit included in the facility wide report

a. Are there other reporting air quality reporting requirements for this emission unit?

If yes, specify reporting frequency in 6.b.
If no, skip to Question 7.

b. Reporting frequency – check all that apply:

Monthly, Quarterly, Semi-annual, Annual, RES
(Include Operating Permit and Plan Approval reports, but not exceedance reporting)

7. Incinerator description:

a. Type:

Check the appropriate box for the type of combustion equipment:

Commercial	Industrial	Medical
Municipal	Sludge	Other: Specify "other" incinerator type

b. Manufacturer

Firm that built the unit, information can be usually found on metal plate on unit.
Do not leave blank: enter unknown if unknown

Provide the requested information for the incinerator

c. Model number

Information can be found on metal plate on unit.
Do not leave blank: enter unknown if unknown

Provide the requested information for the incinerator

d. Maximum operating capacity:	Maximum rated capacity regardless of permit limitations, information can be found on metal plate on unit. Do not leave blank: estimate if unknown
<ul style="list-style-type: none"> Amount In units of: pounds OR tons of waste per hour 	<p>Enter the maximum rated capacity regardless of permit limitations. Do not leave blank: estimate if unknown</p> <p>Tip: The manufacturer's maximum input rating is located on a metal plate on the unit. It is usually expressed in BTU per hour or gallons per hour for engines.</p>
e. Pounds of steam per hour	Required if 7a equals Municipal or Sludge.
f. MMBtu per hour	
WHAT TO DO IF DATA UNKNOWN OR NOT AVAILABLE?	Do not leave blank: if date or numeric field – estimate; for other fields enter UNKNOWN if unknown.
8. Waste type – select one:	<p>Type 0 Waste – dry rubbish, trash</p> <p>Type 1 Waste – rubbish</p> <p>Type 2 Waste – mix of rubbish & garbage</p> <p>Type 3 Waste – garbage</p> <p>Type 4 Waste – infectious/medical waste</p> <p>Type 5 Waste – industrial (liquid)</p> <p>Type 6 Waste – industrial (solid)</p> <p>Other: (Specify Other Waste Type)</p>
9. Source Classification Code (SCC)	<p>The SCC code is an EPA code for the type of unit operation or production process or fuel. EPA's AP-42 (http://www.epa.gov/ttn/chieff/codes/) contains the codes for each type of process, as well as, emission factors that can, in certain circumstances, be used to calculate emissions from each unit</p> <p>For electronic filers: the system will automatically fill in the code description when the form is validated.</p> <p>For paper filers: Write in the description</p>
How does eDEP use source classification codes (SCC)?	<p>The SCC you select will be used to supply the emission factors for the automatic emissions calculation feature included in the eDEP system. The list of SCC valid in eDEP can be found at: http://www.epa.gov/ttn/chieff/codes/.</p> <p>If the SCC code listed on the form is wrong, or the form will not accept the SCC you are entering, contact MassDEP at air.quality@state.ma.us.</p>
10. Amount of material (in Tons) incinerated in year of record:	The amount of fuel used in this emission unit during the calendar year being reported. Enter "0" if fuel not used in the year of record.
<ul style="list-style-type: none"> For year of record In previous year eDEP only 	<p>For electronic repeat filers: this information will be provided by the system</p> <p>For paper filers: you do not need to provide this information</p> <p>For new emission units this section is not applicable</p>
11. Charging rate restriction (for batch units only):	If the facility is a batch unit and it has a restriction imposed through a plan approval enter the maximum charging rate per hour and the units
12. Heat recovery	Check yes if the incinerator engages in this practice, no if not

13. Number of hearths:	Enter the total number of hearths for this emissions unit										
14. Total hearth area: (in square feet)	Total Square Feet of all the hearths in this emission unit										
15. Automatic feeder?	Check yes if the incinerator has this equipment, no if it does not										
16. Hours of operation for the emission unit:	Report on typical operation										
a. Check if typically continuously operated - 24 x 7 x 52											
b. Number of hours per day	Typical operation Acceptable range: 0-24										
c. Number of days per week	Typical operation Acceptable range: 0-7										
d. Number of weeks per year	Typical operation Acceptable range: 0-52										
e. Percent of time emissions unit is operated each calendar quarter:	Actual percent of total annual operations that occurred in each season (e.g. 40% in Q1, 30% in Q2, 20% in Q3 and 10% in Q4) unit operated										
Sum of Q1+Q2+Q3+Q4 must = 100% (or 0%, if the unit was not operational for any quarter).	Q1 is January – March Q2 is April - June Q3 is July – September Q4 is October - December										
17. Ozone season schedule – May 1 through September 30:	Actual operation during this period										
a. Ozone season hours per day	Typical operation Acceptable range: 0-24										
b. Ozone seasons days per week	Typical operation Acceptable range: 0-7										
c. Weeks operated in ozone season	Typical operation Acceptable range: 0-22										
18. Emissions release point	Select the appropriate type of stack or release point Non-Stack Release Points: <table> <tr> <td>-Fugitive</td> <td>-Horizontal</td> <td>Physical Stacks</td> </tr> <tr> <td>-Gooseneck</td> <td>-Downward facing vent</td> <td>-Vertical</td> </tr> <tr> <td></td> <td></td> <td>- Vertical with rain cap/sleeve</td> </tr> </table>		-Fugitive	-Horizontal	Physical Stacks	-Gooseneck	-Downward facing vent	-Vertical			- Vertical with rain cap/sleeve
-Fugitive	-Horizontal	Physical Stacks									
-Gooseneck	-Downward facing vent	-Vertical									
		- Vertical with rain cap/sleeve									

What is a release point? What is the difference between stacks and non-stacks?

The Emission Release Point is the physical structure through which the emissions leave the facility and reach the ambient air. In the previous data system, ALL release points including downward facing and horizontal vents, goosenecks, and fugitive releases were considered "stacks". In the new database, **only vertical release points are considered "stacks"** with assigned DEP and Facility stack numbers and an AP-STACK form.

If the unit has a physical stack, you must link the unit to that stack in question A.19.

NOTE: If you have installed a new stack it will not populate the dropdown unless you first complete and validate an AP-STACK form prior to opening this AP-3. To complete the AP-STACK form, "SAVE AND EXIT" this AP-3 form, open, complete, and validate the AP-STACK form of the new stack, and then return to this form.

19. Link this unit to a physical stack (if applicable) - Pick from the list below.

Facility's stack identifier from Stack form – to change stack name use Stack form
If the stack for this unit is not listed, save and exit this form now and complete a new Stack form **before** completing this form.

CAUTION: for electronic filers:

- If the emission release point in Question #18 is vertical or vertical rain cap and the equipment, then this is a required field.
- If this unit's emissions release point is a new stack, you must have created and completed a BWP AQ AP-Stack form for that new stack, prior to filling out this form. If you do not have the stack #, you will be unable to validate this form; and will forced to save and exit the form. Once you have created, completed, and validated the new stack form, then you may return to complete the AP3 form.

20. Temperature - degrees in Fahrenheit

Put the actual and permitted maximum operating temperature on the "upper" line and the minimum operating temperature on the "lower" line for both the primary and secondary chambers.

	Primary Chamber		Secondary Chamber	
a. Operating range:	Lower	Upper	Lower	Upper
b. Permitted range:	Lower	Upper	Lower	Upper

21. Retention time in seconds

Put the actual and permitted maximum operating retention time in seconds on the "upper" line and the minimum operating retention time on the "lower" line for both the primary and secondary chambers.

	Secondary Chamber	
a. Operating range:	Lower	Upper
b. Permitted range:	Lower	Upper

22 -23. Primary chamber auxiliary burner and Secondary chamber auxiliary burner (if applicable)

These instructions apply to Question 22 and Question 23.

If there are secondary chamber auxiliary burners check the No box under Question 23 and skip to Question 24.

a. Type of burner – check one: Check the appropriate box, provide a description if other

Rotary		
Mech. Atomizer	Air atomizer	Hand fired
Steam atomizer	Traveling grate	Other: specify "other" burner type.

b. Burner manufacturer
c. Burner model number
d. Maximum rating **MMBtu/hr**

Provide the requested information for the burners

e. Source Classification Code (SCC)

The SCC code is an EPA code for the type of unit operation or production process or fuel. EPA's AP-42 (<http://www.epa.gov/ttn/chief/codes/>) contains the codes for each type of process, as well as, emission factors that can, in certain circumstances, be used to calculate emissions from each unit

For electronic filers: the system will automatically fill in the code description when the form is validated.

For paper filers: Write in the description

How does eDEP use Source Classification Codes (SCC)?

The SCC you select will be used to supply the emission factors for the automatic emissions calculation feature included in the eDEP system. The list of SCC valid in eDEP can be found at: <http://www.epa.gov/ttn/chief/codes/>.

If the SCC code listed on the form **is wrong**, or the form will **not accept the SCC** you are entering, contact MassDEP at air.quality@state.ma.us.

f. Type of fuel – check one:

Check the box for the type of fuel burned in this unit:

No. 2, Diesel	No. 4, Natural gas	No. 6, Other: Describe
------------------	-----------------------	---------------------------

g. Sulfur content for oils (0-2.2):

The percentage of sulfur by weight in these fuel type
.TIP: This is determined by analysis of a fuel sample or can be found on the receipt from your fuel dealer.

h. Maximum hourly fuel rate for all firing burners:

The maximum fuel that all burners in this emission unit can fire in one hour, and the units of measurement from the pick list (*e.g., gallons per hour, tons per hour, million cubic feet per hour, etc.*)

- Amount
- Units per hour

If your units are not on the pick list email air.quality@state.ma.us

Units must match the SCC – you must pick the unit from the drop menu associated with the chosen SCC. If you select incorrectly, the system will indicate the correct value after you validate. Remember to check that your Amount matches the correct units. For example, you may need to express a firing rate of 72 gallons/hr as 0.072 1000 gallons/hr when you select an SCC code for liquid fuel.

i. Total actual fuel used for year of record:

- Amount –year of record
- Units
- Total annual usage for prior year of record – eDEP **only**

The amount of fuel used in this emission unit during the calendar year being reported, and the units of measurement from a drop down menu. Enter "0" if fuel not used in the year of record.

IF your units are not on the pick list email air.quality@state.ma.us

For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information
For new emission units this section is not applicable

j. Do you have fuel or usage restrictions?

These would have been expressed in the plan approval you received from MassDEP for this emission unit. Check the appropriate yes or no box. If No, then skip to Question 23.

If the same restrictions also apply to other emission units, report the restrictions on those emission unit forms, as well.

Cite the most recent fuel use restriction applicable to the fuel as it is used in this emission unit. The most recent fuel use restriction may be found in a regulation, an approval that applies only to this emission unit, or one that applies to several emission units, or the facility as a whole.

k. DEP approval number for fuel restrictions: most recent for this fuel.

Obtain this from your plan approval letter

cite either plan approval or regulation

What if the restriction is mentioned in multiple approvals?

Enter the approval number for the approval where the restriction was first established.

l. Annual usage restriction for this fuel:
quantity
units

Provide the maximum amount of fuel, you are allowed to use in a year per your permit, and the units of measurement from the drop down list. Obtain this from your plan approval letter

If your units are not on the pick list email air.quality@state.ma.us

What if the restriction is mentioned in multiple approvals?

Enter that same quantity here and on the forms for each other unit to which it applies.

m. Short term fuel usage restriction for this fuel:

Provide the maximum amount of fuel, you are allowed to use over the short term period specified in your plan approval. Obtain this from your plan approval letter

- Quantity
- Units
- Per:


Choose the units of measurement from the drop down list. If your units are not on the pick list email air.quality@state.ma.us

Check the appropriate box for the time period: Month, Week, Day or Hour.

24. Are there air pollution control devices on this emissions unit?

Check the appropriate yes or no box. If no, skip to question 25

If yes, answer a through i for each piece of air pollution control equipment associated with the emission's unit in a separate column.

 **NOTE:** If other emissions units use the same air pollution control equipment, also report this information on the appropriate BWP AQ AP-1 or BWP AQ AP-2 forms for those units. If you have more than three control devices, checking the box in the left hand margin will lead you through the process of creating additional forms.

?Note: in order to create and access the new air pollution control device forms you will have to:

1. Click on validate to enter the data you have provided on this form up to this point into the system. The system will force you to correct any errors before it will create the new <AP3-APC form>. (Which will return you to the <Related Forms – Transactions ID page>)
2. Click on, complete, and validate the new <AP-3 APC form> (which will return you to the <Related Forms – Transactions ID page>)
3. Reopen and finish this form

How to delete an air pollution control device?

Delete an air pollution control device (APC) by entering a date in Decommission Date (A.14.h). Use this when you are removing the device permanently.

To replace a device: if the APC device was replaced in kind with a new model, enter the new installation date and replace the information on lines a-i, as necessary. Do not enter a "decommission date"– the MassDEP database tracks the change to the APC equipment automatically.

a – d. Air pollution control device (description)

a. Type (Use The Pick List)
b. Manufacturer

c. Model Number
d. Facility's Id For This Device.

What to do if you don't know the date?

Provide your best approximation of the date if you do not know it.
Do not leave blank

e – h. Air pollution control equipment dates and approval numbers:

e. Installation date (mm/dd/yyyy)

If unknown enter your best approximation

f. DEP approval number (most recent)

 **?Note:** not all air pollution control devices require plan approvals

g. DEP approval date (mm/dd/yyyy)

h. Decommission date (mm/dd/yyyy)

i. Percent overall efficiency – enter for all pollutants that the device was designed to control:

The *Percent Overall Efficiency* calculated based on the APC equipment's Capture Efficiency (the percentage of the emissions that reach the air pollution control unit) x APC equipment's *Control Efficiency* (the percentage of the emissions that are removed from the air stream by the Air Pollution Control Equipment.)

- If you have stack-testing data on control efficiency: Use that information.
- If you do not have stack-testing data: Use the manufacturer's suggested control efficiency. This is usually expressed as a range of percentages (e.g., 90%-97%). Use the upper end of the range.

What is the % overall efficiency?

The % overall efficiency for a device equals its ("% capture efficiency" X "% control efficiency"). **It is critical for the automatic emissions calculations.** This information can be found in the plan approval application, MassDEP's approval for the device and/or in the manufacturer's specification for the device.

PM 10
PM 2.5
SO2
CO

VOC
NO2
NH3
HOC


HYC
Hg
Pb


Other:

List any substances not already listed on the form that you are required to control per your plan approval, operating permit, or applicable regulation. Only one "Other" is available for each APC device

25. Is there monitoring equipment on this emissions unit?

Answer Yes or No, as appropriate. If no, skip to question B. Fuels and Emissions

 **?NOTE:** report on each monitor that is on the release point for this emissions unit in the separate columns provided.

 **?NOTE:** If other emissions units use the same release point, also report this information on the BWP AQ AP-1 or AP-2 form for those units

How to delete a monitor?

Delete a monitor by entering a date in Decommission Date (A.25.h). Use this when you are removing the monitor permanently.

How to replace a monitor?

If the monitor was replaced in kind with a new model, enter the new installation date and replace the information on lines b-i as necessary. Do not enter a "decommission date"– the MassDEP database tracks the change to the monitor equipment automatically.


a. Monitor type: Check the appropriate box for the type of monitoring device. Check only one for each monitor (use another column if there are other types of monitors on the release point.)

CEMs,	Time recorder	Other - If other: is checked then Describe
Opacity	Temperature recorder	"other" is required
Fuel flow meter	Pressure	

b. Manufacturer: The name of the manufacturer of the monitoring equipment attached to the stack and the model number assigned by the manufacturer.

c. Model number:

d. Monitor ID #: The unique ID that the facility has assigned to the monitoring device

 **NOTE:** for facilities that report under 40 CFR 75: use 3-digit monitoring system ID as your facility ID number

e. Installation date: For facilities that report under 40 CFR 75: use the "First Date System Reported Data" as the installation date

f. DEP approval #: From your permit or plan approval

g. DEP approval date:
(mm/dd/yyyy)

h. Decommission date:

i. Recorder

j. Audible alarm

Whether or not this device is attached to the monitor

k. Data System

Whether or not a data system that continuously logs monitoring data for future review is attached to the monitor

What is a "data system"?

A data system continuously captures monitoring data for future review and analysis.

l. Monitored pollutants

Check the contaminants that are monitored by the monitoring device:

PM 10	VOC	Oxygen	Opacity
PM 2.5	NO2	CO2	
SO2	NH3	H2S	
CO	Mercury	HCL	

Other

List any substances not already listed on the form that you are required to monitor per your plan approval, operating permit, or applicable regulation

B. EMISSIONS

Note: Hazardous Air Pollutant Emissions (Cadmium, Mercury or other substances only need to be reported on the TES form. They do not need to be reported at the emission unit level

1. Total emissions for this emissions unit - tons per year:

The Actual, Potential, and, if applicable, Permitted emissions from this unit for each listed air contaminant during the calendar year being reported

What are total emissions for this emission unit?

This form automatically calculates the total actual and maximum potential emissions of each pollutant from this emission unit. It calculates these values from the data you entered for each fuel.

Please enter any emission limits that apply to the unit as a whole (regardless of fuel) under "Permitted" below.

Actual (in Tons) for previous year

For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information

For new emission units this section is N/A

Actual (in Tons) for Year of Record	<p>The actual emissions for the calendar year being reported; Calculate this information</p> <p>Note: For facilities that also report under 40 CFR 75: If the unit reports SO₂ or NO_x under 40 CFR 75 monitoring provisions, on an annual basis, then the total emissions for all fuels reported here should equal that reported under 40 CFR 75.</p> <p>Calculate this information</p>
Potential emissions at maximum capacity:	<p>Please see Appendix C: Example Calculations.</p> <p>Potential emissions are the maximum allowable under the terms of the applicable plan approval, or, if no plan approval is required, under the applicable regulations, assuming you operate 24 hours per day 7 days a week at maximum capacity</p> <p>CAUTION: Pay close attention to the “potential emissions” calculations, because potential emissions help to define the regulatory requirements to which your facility is subject.</p>
Maximum allowed emissions (in Tons) – annual	Maximum annual emissions allowed pursuant to your permit or plan approval.
Maximum allowed emissions (in Tons) - short term	These questions only apply if this entire emission unit is subject to a plan approval or permit that restricts operations or emissions. Permitted emissions equal potential emissions for facilities with operating restrictions.
Short term period:	Note: Some emission units will not have plan approvals because they are “permitted by rule” – installed in accordance with the provisions of 310 CMR 7.03, they are below the threshold for which a plan approval or permit is required, or they were installed prior to the effective date of the regulation.
Basis – DEP approval number or regulation:	<p>If a plan approval is required: write the approval number for the plan approval that approved the installation of the emission unit/segment. This number is found on the letter sent by MassDEP that informed you that they approved the unit.</p> <p>If a plan approval is not required: Cite the regulation under which the equipment was installed.</p>
Emission factor	<p>For electronic filers: Provide this information only if you are calculating the emissions yourself</p> <p>For paper filers: Provide this information</p>
Emission factor units in pounds per unit:	Note: In many cases, emission factors found in EPA’s AP-42 http://www.epa.gov/ttn/chief/codes/ can be used to estimate actual emissions.
What are emission factors?	<p>Emissions factors are the amount of pollution generated per unit of operation. For fuels, total tons of emissions are obtained by multiplying [EF in #/fuel unit] x [fuel usage] x [conversion to tons] = TPY of emissions. If you allow eDEP to calculate your emissions, this field will be filled with EPA default emission factors based on the SCC. If you choose to calculate your own emissions, you must enter the emission factor that you used.</p> <p>The EPA emission factors used by eDEP can be found at: http://mass.gov/dep/service/compliance/sr.htm</p> <p>Because they are generic, the EPA SCC emission factors are not applicable in all situations. They may overstate emissions for facilities subject to certain BACT (Best Available Control Technology) requirements or RACT (Reasonably Available Control Technology).</p> <p>The instructions provide more information about using emissions factors to calculate emissions (http://mass.gov/dep/service/compliance/sr.htm).</p>

2. Ozone season emissions –
May 1 through September 30:

a. Typical day VOC emissions –
pounds per day

b. Typical day NOx emissions –
pounds per day

Check to enter your own values

Ozone season calculation options:

This form automatically calculates an estimate of the ozone season emissions for this emission unit using the data you provided on ozone season operation and some simplifying assumptions. If you wish to report a more precise value based on your own calculations and data, check the box below the blank lines at 2.a. and 2.b.

☐ **NOTE:** The form will estimate the ozone season emissions for you. However, you may enter your own values by checking the boxes

C. NOTES AND ATTACHMENTS

This section is to identify any explanatory material the facility is choosing to submit along with this form

If the material can be sent electronically, check the box for the appropriate form

If paper information must be submitted, list the titles of the documents being submitted on the lines provided

BWP AQ AP-4 Emission Unit – Organic Material Storage

PURPOSE	This form summarizes the equipment used and the organic materials stored or transferred for the calendar year being reported.
WHEN IS THIS FORM APPLICABLE?	The number of versions of this form depends on whether you are filing in paper or electronically
Applicability For Electronic Filers	If your facility is filing its first source registration: This form applies if your facility stores organic material in any below- or above-ground storage container that is larger than 500 gallons
Applicability for Paper Filers	Only Submit this form if you are a first time filer or if you are repeat filer and your facility has installed a new storage container for an organic compound that was larger than 500 gallons since your last source registration. (Existing emissions units will show up on your "Side by Side" paper report and the emissions information should be provided on that form) If you are a first time filer and this form does not apply, write Not Applicable on the form and submit it with the rest of the package.
HOW MANY VERSIONS OF THIS FORM ARE REQUIRED?	The number of versions of this form depends on whether you are filing in paper or electronically
How many versions of this form do electronic filers have to submit?	One form must be completed for each above or under ground storage container containing "Organic Material" with a capacity greater than 500 gallons.
CAUTION FOR ELECTRONIC FILERS WITH NEW PROCESS EMISSIONS UNITS SINCE THEIR LAST SOURCE REGISTRATION	You must create a new emission's unit form for any new emission unit. If you have not already created the new emissions unit, prior to submitting your complete source registration; you must create a new eDEP partial AQ Source Registration package for that emission unit. Once you have submitted the package you are working on: <ul style="list-style-type: none">• Return to "Start New",• Select "AQ Source Registration Package";• In SR Overview Form: B.1: Amend a Source Registration,• Select "Check here to add new units:"• Follow subsequent instructions
How many versions of this form do paper filers have to submit?	Repeat filers: Only submit one form for each new organic material storage container with a capacity greater than 500 gallons emissions unit added since your last source registration. All other reporting will be done on the "Side –by –Side" form that MassDEP will send you. First time filers: Submit one form for each organic material storage container with a capacity greater than 500 gallons

A. EQUIPMENT DESCRIPTION

- If you obtained a plan approval for the emission unit(s) you are reporting on for the first time, you will have received two documents from MassDEP: a plan approval letter and a copy of the permit application that you submitted to MassDEP. It will be easier to fill out the Source Registration forms if you refer to those two documents.
1. Facility Identifiers
- The name and identifying numbers of the facility or plant that is reporting.
- a. Facility Name
- For electronic filers: this will be prepopulated from the information on your BWP AQ AP-SR form
- b. DEP Account number
- c. Facility AQ Identifier –
- Special instructions for paper filers: If your facility has submitted previous source registrations: You must

SSEIS ID	Use the same name, DEP Account number and SSEIS ID that you are reporting on your side-by-side computer printout.
2. Emission Unit Identifiers	If this is a NEW Emission Unit Assign the emission unit a name/number in order to uniquely identify it If this is an existing Emission Unit: Assign or change the emission unit name/number in order to uniquely identify it
a. Facility's emission unit name	Your choice of unique name for this tank; Example: Methyl Ethyl Ketone Tank #1.
b. Facility's emission unit number / code	Your choice of unique number for this tank For electronic filers: if this is an existing emissions unit the information will be prepopulated, but you can change it For paper filers: this information will be on your "Side by Side" Form.
How the new system relates to the old SSEIS stack-point-segment numbering?	On the old Side-Side form individual "emission units" were called "points". The DEP number (2.c) is the point number from the old forms. Points were assigned to "stacks" whether there existed an actual stack or not. The new system is organized around the emission units (points). Stacks are only assigned to a point if they are a vertical stack (such stacks keep their old stack number). EDEP allows you to change the name (2.a) and give your own number (2.b) to each tank. MassDEP keeps track of the units by the DEP number (2.c), and therefore you cannot change it.
c. DEP emissions unit # - SSEIS point #	If this is a new Emissions Unit Leave blank – MassDEP will assign this number. If this is an existing Emissions Unit, the information will be prepopulated for existing emissions units. Only use this form for new emissions units. A unique number assigned by MassDEP that allows MassDEP to recognize the unit on future reports
d. Combined Units – enter number of individual units	Enter total number of individual units combined on this AP-4
What is a combined unit?	Storage containers can be combined into one unit for the purpose of Source Registration provided they are identical, store the same material and have a combined capacity of less than 50,000 gallons.
3. Emission unit installation and decommission dates	Provide the requested dates in the appropriate lines. If the unit was installed many years ago and you do not know the exact date use your best approximation
a. Installation date – estimate if unknown (mm/dd/yyyy)	
b. Decommission date (mm/dd/yyyy) – if applicable	Date the tank was taken permanently out of service Complete only if the unit was shut down permanently or replaced since the last report. Enter a decommission date in 3.b if the tank is being permanently taken out of service. If the decommissioned tank operated in the year of record, the throughput from that unit must be included in this AP-4 form. Therefore units "decommissioned" in this package will remain on the list of emission units reporting for this year of record. They will NOT appear on the NEXT source registration package, however.
How / when to delete a unit?	

4. Emission unit replacement

a. Is this unit replacing another emission unit?

Check the appropriate box, yes or no. If Yes – enter DEP's emission unit number for the unit being replaced.

b. DEP's emission unit number and facility unit name

Paper filers: Enter the facility's emission unit name from field 2a and facility's emission unit number/code from field 2b. Leave the DEP number blank; MassDEP will assign it when the record is updated.

How to be sure the unit being replaced appears in this menu?

CAUTION for electronic filers: This is a required field. If you eliminated this unit since your last source registration and have replaced it with another emissions unit you must have created and completed the BWP AQ AP-4 Emission Unit - Organic Material Storage Form and obtained a DEP Emissions Unit number and created a facility name for that new unit prior filling out this form. If you do not have it you will be unable to validate the form and will be forced to save and exit this form and return to complete it after you have the DEP Emission Unit number for the new storage container

Line A.4.b. " DEP's emission unit number and facility's name for emission unit" are mandatory fields when the "yes" box is checked. However, the unit being replaced will not appear as a choice on the drop down menu until it is decommissioned. You will not be able to complete and validate the AP form for a replacement unit until you have first entered a decommission date and completed and validated the AP form for the unit it is replacing. If this unit is replacing another unit that has NOT been "decommissioned", you must 1) save and exit this form, 2) open the AP form for the unit being replaced, 3) enter the decommission date, 4) complete and validate the form before you can complete this AP Form.

What if one emission unit is replacing more than one unit?

If one new tank is replacing several tanks, pick one of the units being replaced on the pick list and note the others in Section B Notes and Attachments.

5. Unit descriptions

Check the appropriate boxes, if other describe

a. Description

Above ground

Below ground

b. Roof type

Floating roof

Internal roof fixed

c. Height - feet

d. Diameter - feet

e. Capacity – gallons

How to report on combined units?

If this is a combined unit, report the combined capacity of all of the tanks in Question 5e, and the total throughput for all the tanks in Questions 7g and 8g (if more than one liquid was stored). Enter the most common height and diameter in questions 7c and d and most common construction type in Question 8.

6. Construction:

Check the appropriate boxes:

Steel weld

Other weld

Rivet

Fiberglass

Gunit

7 – 8. Material stored and
New material stored
(enter new material if
contents changed during
year of record):

a. Name of material

b. CAS number if single
chemical

Write the name of the chemical or formulation, if it is a chemical, write the CAS number. This can be found on the MSDS for the material

- c. SCC code for standing / breathing loss
- d. SCC code description –

The SCC code is an EPA code for the type of unit operation or production process or fuel. EPA's AP-4 (<http://www.epa.gov/ttn/chieff/codes/>) contains the codes for each type of process as well as emission factors that can, in certain circumstances, be used to calculate emissions from each unit

For electronic filers: the system will automatically fill in the code description
For paper filers: write in the description

Where do you find Source Classification Codes (SCC)?

SCC are standard codes EPA uses to identify different operations and the associated emissions factors. The list of SCC valid in eDEP can be found at <http://www.epa.gov/ttn/chieff/codes/>. If the SCC code listed on the form **is wrong**, or the form will **not accept the SCC** you are entering, contact MassDEP at air.quality@state.ma.us.

- e. Vapor pressure PSI

This information can be found on the MSDS for the material
Vapor Pressure is listed on MSDS

- f. Temperature - °Fahrenheit

Average Temperature

- g. Annual throughput in gallons

Total amount of the material added to the storage container during the calendar year being reported, and the units of measurement

- h. Total oxygen content in gallons - gasoline only

Only provide this information for gasoline.
Obtain this from the MSDS

- i. Oxygenate name – gasoline only

Gallons added during the Year Of Record
Only provide this information for gasoline.
Obtain this from the MSDS

How do I report blends of gasoline?

If tank holds 2 blends of gasoline, enter RVP, oxygen content, and oxygenate data for one constituent in question 7 and the information for the other constituent blend in Question 8

B. NOTES AND ATTACHMENTS

This section is to identify any explanatory material the facility is choosing to submit along with this form

If the material can be sent electronically, check the box for the appropriate form

If paper information must be submitted, list the titles of the documents being submitted on the lines provided

BWP AQ AP-STACK Instructions

PURPOSE

This form describes the physical characteristics of the facility's stacks: vertical release points for air emissions

WHEN IS THIS FORM APPLICABLE?

The number of versions of this form depends on whether you are filing in paper or electronically

Applicability for **Electronic** Filers

This form applies if your facility has a vertical stack, with or without a rain cap

Exclude the following types of release points:

- Fugitive
- Horizontal
- Downward facing vent
- Gooseneck air pollution control

Applicability for **Paper** Filers

Only Submit this form if you are a first time filer or if you are repeat filer with a new vertical release point (stack). (Existing stacks will show up on your "Side by Side" paper report and the emissions information should be provided on that form)

If you are a first time filer and this form does not apply, write Not Applicable on the form and submit it with the rest of the package

HOW MANY VERSIONS OF THIS FORM ARE REQUIRED?

The number of versions of this form depends on whether you are filing in paper or electronically

How many versions of this form do electronic filers have to submit?

Submit one form for each vertical release point at your facility. You need to include forms for any stacks that were decommissioned since your last source registration as well as any stacks that were added in that time period.

CAUTION: FOR ELECTRONIC FILERS WITH NEW STACKS (VERTICAL RELEASE POINTS) SINCE THEIR LAST SOURCE REGISTRATION

You must create a new emission's unit form for any new emission unit. If you have not already created the new emissions unit, prior to submitting your complete source registration; you must create a new eDEP partial AQ Source Registration package for that emission unit. Once you have submitted the package you are working on:

- Return to "Start New",
- Select "AQ Source Registration Package";
- In SR Overview Form: B.1: Amend a Source Registration,
- Select "Check here to add new units:"
- Follow subsequent instructions

How many versions of this form do paper filers have to submit?

Repeat filers: Only submit one form for each incinerator unit (that is not an air pollution control device) added since your last source registration. All other reporting will be done on the "Side – by – Side" form that MassDEP will send you.

First time filers: Submit one form for each stack at your facility.

A.. EQUIPMENT DESCRIPTION

?Note: In general the information requested below will be prepopulated from MassDEP's SSEIS database. However, certain data submitted to MassDEP on paper AP forms was not historically stored in SSEIS. That data will not appear on the electronic forms until it has been submitted electronically.

With certain exceptions, which will be noted, the facility can edit any information listed below.

. TIP If you obtained a plan approval for the emission unit(s) you are reporting on you will have received two documents from MassDEP: a plan approval letter and a copy of the permit application that you submitted to MassDEP. It will be easier to fill out the Source Registration forms if you refer to those two documents

1. Facility Identifiers

The name and identifying numbers of the facility or plant that is reporting.

a. Facility Name

For electronic filers: This will be prepopulated from the information on your BWP AQ SP-SR Form.

b. DEP Account number

c. Facility AQ Identifier - SSEIS ID

?NOTE: You cannot change your facility name on this form. To change your name you must contact your MassDEP Regional Office FMF Data Manager

Special instructions for paper filers: If your facility has submitted previous source registrations: You must use the same name, DEP Account number and SSEIS ID that you are reporting on your side-by-side computer printout.

How the new system relates to the old SSEIS stack-point-segment numbering?

In SSEIS, ALL release points including downward facing and horizontal vents, goosenecks, and fugitive releases were considered "stacks". In the new database, only vertical release points are considered "stacks" with assigned DEP and Facility stack numbers and an AP-STACK form.

eDEP allows you to change the name (2.a) and give your own number (2.b) to each stack. MassDEP keeps track of the stacks by the DEP number (2.c) and therefore you cannot change it. The DEP number is the old SSEIS stack number.

2. Emission Unit Identifiers

If this is a new Emission Unit: Assign the emission unit a name/number in order to uniquely identify it.

If this is an existing Emission Unit: Assign or change the emission unit name/number in order to uniquely identify it

a. Facility's emission unit name

A unique name of your choice that will allow you to recognize this unit on future reports

b. Facility's emission unit number / code

A unique number or code of your choice that will allow you to recognize this unit on future reports. *Example: Boiler #1, Emergency Generator #2, Fire Pump #3 etc*

For electronic filers: If this is an existing emissions unit the information will be prepopulated
For paper filers: This information will be on your "Side by Side" Form for existing emissions units. Only use this form for new emissions units.

c. DEP emissions unit # - SSEIS point

If this is a new Emissions Unit Leave blank – MassDEP will assign this number.

If this is an existing Emissions Unit, the information will be prepopulated for existing emissions units. Only use this form for new emissions units.

A unique number assigned by MassDEP that allows MassDEP to recognize the unit on future reports

3. Stack type: Check the box

Vertical

Vertical with rain cap/sleeve

4. Dimensions:

- Height in feet
 - Diameter in feet
5. Gas exit velocity: This is the range of speeds in feet per second with which the gas exits the stack
- Low end – feet per second Valid range 0.1 through 100
 - High end – feet per second Valid range 0.1 through 100
6. Exit temperature This is the range of temperature in degrees Fahrenheit at which the gas exits the stack
- Low end – ° Fahrenheit Valid range 50 through 1800
 - High end – ° Fahrenheit Valid range 50 through 1800
7. Stack liner material: Check the appropriate box, if other describe
- Metal Brick Refractory Other: Describe "other"
8. Decommission date –if applicable (mm/dd/yyyy) Complete only if the stack was permanently removed.
- When / how to delete (decommission) a stack?**
- Delete a stack when it is permanently taken out of service by entering a Decommission Date (A.8). You must complete the form for this Year of Record, but eDEP will know to remove it from your next Source Registration package.
- A Stack may only be decommissioned in this report if it was out of service for the entire Year of Record covered by this report or replaced by another Stack during the "Year of Record" covered by this report.
- Stacks that were taken out of service but not replaced during this "Year of Record" can only be "decommissioned" on the next required Source Registration.
 - Stacks may only be decommissioned in this report if it is replaced by another Stack during the "Year of Record" covered by this report.
- Stacks decommissioned in this report will not appear on the NEXT source registration package.


B. EMISSION UNITS ASSOCIATED WITH STACK

These fields are provided for information only. You cannot change them on this form.

They show which emissions units are associated with which stacks.

If you want to change these associations, you must do so on the appropriate emissions unit form:

- AP-1 for Fuel Utilization Equipment
- AP-2 for Process Emissions
- AP-3 for Incinerators

 **NOTE:** Any changes you make to these associations will not show up on this form until you have submitted your entire source registration package to MassDEP


C. NOTES AND ATTACHMENTS

This section is to identify any explanatory material the facility is choosing to submit along with this form

If the material can be sent electronically, check the box for the appropriate form

If paper information must be submitted, list the titles of the documents being submitted on the lines provided

BWP AQ AP-TES Total Emissions Statement & Hazardous Air Pollutant List Instructions

PURPOSE	This summarizes the annual air pollution emissions for the facility as a whole.
WHO MUST FILE THIS FORM?	This form must be completed by each facility submitting their Source Registration.
HOW MANY VERSIONS OF THIS FORM ARE REQUIRED?	Submit one form for the whole facility.
WHEN IS THIS FORM APPLICABLE?	The applicability of this form depends on whether the facility is filing an electronic or paper source registration
Applicability for electronic filers	This form applies to all filers
Applicability for paper filers	Only submit this form if you are a first time filer
A. ANNUAL TOTAL EMISSIONS STATEMENT	
	Most of the information of the information on the form below will have been calculated automatically on the basis of the information you provided on the AP-1, AP-2, AP-3 and AP-4 forms
1. Facility Identifiers	The name and identifying numbers of the facility or plant that is reporting.
a. Facility Name	For electronic filers: This will be prepopulated from the information on your BWP AQ SP-SR Form.
b. DEP Account number	
c. Facility AQ Identifier –SSEIS ID	 ?NOTE: You cannot change your facility name on this form. To change your name you must contact your MassDEP Regional Office FMF Data Manager
	Special instructions for paper filers: If your facility has submitted previous source registrations: You must use the same name, DEP Account number and SSEIS ID that you are reporting on your side-by-side computer printout.
2. Total Emissions	This form calculates your facility's actual and potential emissions by adding the emissions you entered in forms for each emission unit. The results are displayed in the table below. You must validate forms for each emission unit before the results below can be completed. To enter HAP emissions, see Section D.
How are total emissions calculated?	When you open this form, eDEP sums all of the emissions from all of the emission units at this facility for which you have submitted data for the current Year of Record (even if they are not included in this package).
	These fields are locked; you cannot edit these values.
	The values displayed in the table will not reflect total facility emissions until all emission units at your facility are updated for the current year of record.
3. Facility -wide Emission Limits	Please enter facility -wide annual or short-term emission limits below, if any. To enter HAP restrictions, see Section D.

Total Emissions - report facility -wide, permitted emissions limits in the table below

This forms report your total actual and potential facility wide emissions for each contaminant you reported on the emissions unit forms that you have filled out and validated for this year and what you reported on your previous source registration (If you have not filled out and validated all of the required emissions units forms the data on this form will understate your facility wide emissions.)

Contaminants include:


PM10 PM2.5	SO2 NO2	CO VOC	HOC Reserved	NH3 CO2
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CO2

Check the box if you want to enter the CO2 emissions for this FACILITY as a whole.

Potential CO2 emissions are optional - enter "0" if you do not wish to enter a potential CO2 emission.

For instructions on calculating CO2 emissions, please see the instructions at:
<http://mass.gov/dep/service/compliance/sr.htm>

 **NOTE:** Those units subject to annual 40 CFR Part 75 reporting for CO2 must report the same value here as they reported to EPA through the Clean Air Markets Division. Potential CO2 emissions are optional -- enter "0" if you do not wish to enter a potential CO2 emission..

Actual for previous year

For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information
For new emission units this section is not applicable


Actual for year of record
Potential emissions at maximum capacity:

Most of the information of the information will have been calculated automatically on the basis of the information you provided on the AP-1, AP-2, AP-3 and AP-4 forms


Facility -wide max allowed (permitted) emissions-annual:

Enter the requested information.

Facility -wide max allowed (permitted) emissions- short term:

 **NOTE:** This applies to restrictions on emissions ONLY. Restrictions on fuel use, raw material use or products are reported in Question 4.

Short term period:

 **NOTE:** Only enter restrictions that apply to the entire facility. Many restrictions apply only to particular emissions units. Those have already been reported on the emissions units forms

Basis: DEP approval number or regulation:

When do I complete the "max-allowed" (permitted) emission fields?


Complete the "max-allowed" fields if there is an annual or a short-term emission limitation applicable to the facility as a whole expressed in either a DEP approval or a regulation. Be sure to enter the approval number or regulation under "Basis" below. For example, a facility-wide emission limit from a plan approval such as 45 TPY of oxides of nitrogen, or 99 tons per year of particulate matter.

If the restriction is mentioned in multiple approvals:

Enter the approval number for the approval where the restriction was first established.

4. If you have facility -wide fuel, raw material, or product restrictions, complete the following:

Provide the requested information for each facility wide restriction, otherwise leave blank
DEP approval number (most recent)
Amount of restriction
Restriction units (e.g., gallons, tons)
Per unit time (e.g. yr, mo, wk, day, hr)
Description of fuel, raw material or product restricted.

 **NOTE:** Only enter restrictions that apply to the entire facility. Many restrictions apply only to particular emissions units. Those have already been reported on the emissions units forms

When do I complete the facility-wide restriction fields?

Complete Question 4 fields, if there is an annual or a short term restrictions (other than emissions), which applies to the whole facility. For example, a facility -wide limit from a plan approval for xxx gallons of fuel per month and xxxx gallons per year OR a limit on the hours of operation or a production limit.

If the restriction is mentioned in multiple approvals:

Enter the approval number for the approval

B. Greenhouse Gas (GHG) List

WHAT ARE THE THRESHOLDS FOR REPORTING GREENHOUSE GASES?

There are no thresholds – if your facility, to the best of your knowledge, uses or emits any amount of N₂O, SF₆, HFC, PFC, check the appropriate box (es). This includes (but is not limited to) refrigeration equipment and other similar systems.

CALCULATION TOOLS FOR GHG EMISSIONS FROM ENERGY AND ELECTRICITY

The World Resources Institute (WRI) GHG Protocol site (<http://www.ghgprotocol.org/templates/GHG5/layout.asp?type=p&MenuId=OTAx>) provides a number of calculation tools for a number of different processes. Emission Statement filers could use any of these tools that fit the filers particular process. The one that would likely have the most applicability for the largest number of Emission Statement filers would be the "Revised tool for direct emissions from stationary combustion".

To find this specific tool one would need to scroll down to the heading "Calculation tools for GHG emissions from energy and electricity". The revised Stationary combustion tool is the third one listed under that heading.

How do I calculate CO₂ emissions?

If you are a large facility subject to reporting annual CO₂ emissions under EPA's regulation 40 CFR Part 75, report the same value that you reported to EPA. Otherwise, use the World Resources Institute (WRI) GHG Protocol applicable for your particular process, at

<http://www.ghgprotocol.org/templates/GHG5/layout.asp?type=p&MenuId=OTAx>

How do I use CEM data?

If you are a facility that determines annual emissions from CEMS, report the CEMS emissions value on your Source Registration form.

How do I use Part 75 reported values?

If you are a large facility subject to reporting annual emissions under EPA's regulation 40 CFR Part 75, you must report the same value that you reported to EPA.

Use Emitted

Please indicate which – if any - of the following greenhouse gas chemicals are used and/or emitted by checking the appropriate box:

Check the appropriate box (es) for each chemical.

Nitrous oxide N₂O
Hydrofluorocarbons (HFC's)
Sulfur Hexafluoride (SF₆)
Perfluorocarbons (PFCs)

C. HAZARDOUS AIR POLLUTANT (HAP) LIST

What is a HAP?

Hazardous Air Pollutants (HAPs) are those labeled as such by the US EPA under Section 112 of the Clean Air Act as listed below. For the purposes of Source Registration, HAPs do not include products of combustion, components of a fuel, or materials used in a sealed system such as a condenser. See the Source Registration instructions for more information at: <http://mass.gov/dep/service/compliance/sr.htm>

What are the thresholds for reporting HAPs?

If you use 500 GALLONS or more OR emit more than 1 TON of any individual Hazardous Air Pollutant (HAP) listed below, check the appropriate boxes. Do not include products of combustion, components of a fuel, or materials used in a sealed system such as a condenser when estimating your emissions of an individual HAP.

1. Does your facility use any of the Hazardous Air Pollutant chemicals regulated under Section 112 of the Clean Air Act listed on the following pages:

Check the appropriate yes or no box

If no, skip to section D

If yes, place a check in the use box for all chemicals that you use and in the emit box for all chemicals that you emit.

?Note: In general you emit all chemicals that you use. If you emit a chemical you must, by definition also "use" it


D. HAZARDOUS AIR POLLUTANT EMISSIONS

1. Does the facility have the potential to emit (PTE) 10 tons of any single listed Hazardous Air Pollutant (HAP)

Answer Yes or No as appropriate

Potential emissions ① are the maximum allowable emissions under the terms of the applicable plan approval, or, if no plan approval is required, under the applicable regulations.

See the Appendix C: Example Calculations.

 **CAUTION: Pay CLOSE attention to the “potential emissions” calculations, because potential emissions help to define the regulatory requirements to which your facility is subject.**

For example,

- ✓ *If your facility-wide potential emissions exceed the major source thresholds ① for any air contaminant including HAPs ①, you are required to obtain an air operating permit pursuant to 310 CMR 7 Appendix C, or to restrict your emissions through a federally enforceable permit (RES) pursuant to (310 CMR 7.02(9)). Contact your MassDEP regional office if you exceed a major source threshold and you have not filed an application for an air operating permit or a RES. The names and addresses of the Regional Offices are listed in Appendix F.*
- ✓ *Similarly, if your potential emissions of Hazardous Air Pollutants ① (HAPS) exceed the applicable Maximum Achievable Control Technology (MACT) standard threshold (for most standards this is a major source threshold) in 40 CFR Part 63 as of the substantive compliance date ① for that standard, EPA policy states that your facility would NOT be allowed to restrict your potential emissions below the applicable MACT threshold. Thus, according to EPA policy, unless your facility restricts its potential emissions to under the threshold BEFORE the substantive compliance date, your facility would be required to comply with the MACT standard. Furthermore, as a consequence of being subject to a MACT standard, your facility would also be required to obtain an air operating permit, pursuant to 310 CMR 7 Appendix C. The list of MACT standards and their substantive compliance dates can be found in Appendix E.*

DO YOU NEED AN AIR OPERATING PERMIT?

If you answer yes to Questions 1 or 2, the facility exceeds the applicability thresholds for the federally mandated operating permit program. Contact your Regional MassDEP Permit section for information. The Source Registration website lists the necessary phone numbers: <http://mass.gov/dep/service/compliance/sr.htm>.

You must open another browser window to access this URL.

2. Does the facility have the potential to emit (PTE) a total of 25 tons of any combination of listed Hazardous Air Pollutants (HAPs)?

Answer Yes or No as appropriate

Please see refer to the cautions about potential emissions in the question above

Are you subject to TURA?


If you manufacture, process, or otherwise use more than 10,000 lbs of any one Toxics Use Reduction (TURA) chemical during the calendar year your facility may be subject to TURA reporting. Certain PBT chemicals have lower reporting thresholds. The Source Registration Web page lists the phone numbers: <http://mass.gov/dep/service/compliance/sr.htm>.

You must open another browser window to access this URL.

3. Does the facility have a restriction on total HAPS?

Answer Yes or No as appropriate.

You must answer Yes, if you have any restriction on any facility wide or emission unit restriction on any HAP

 **Note** for Municipal Waste Combustors: Your facility has restrictions on certain HAPS. You must answer yes

4. Are you required to report HAP emissions for any other reason? (e.g. a permit condition)

Answer Yes or No as appropriate if you must report on HAPS for any reason

5. If you answered "yes" to any of the Questions 1 – 4 above, eDEP will generate additional pages in which you may enter those emissions.

If you answered no, proceed to E. Notes and Attachments

If you answered yes, you must click <validate> now to access the additional pages for entering HAP emissions. The system will force you to make any necessary corrections.

Once you have made all of the required corrections you will be returned to the <Related Forms Transaction ID #> page

To continue your work on this form, click on the <AQ TES HAP (F) > form, you see listed under the form you were just working on. Once you have completed the additional HAP forms you will have to come back into this form to finish the notes and attachments (if you have any).

E. NOTES AND ATTACHMENTS

This section is to identify any explanatory material the facility is choosing to submit along with this form

If the material can be sent electronically, check the box for the appropriate form

If paper information must be submitted, list the titles of the documents being submitted on the lines provided

F. HAZARDOUS AIR POLLUTANT EMISSIONS

Emissions (in tons/year): Enter the actual and potential emissions for your largest single HAP your facility emitted the most of for this year of record.) Enter emissions for any additional HAPs, and then validate the form. Do not enter Total HAP emissions here- eDEP will present another form for Total HAPs after you validate this form.

Max Allowable Emissions (in tons per year): Enter only restrictions (limits) that apply to the entire facility. If there are no such restrictions, leave blank.

WHERE DO YOU ENTER TOTAL HAP EMISSIONS?

On the NEXT form, Section G. After you validate this form, eDEP will generate the HAP Total form, where you enter your facility-wide total HAP emissions and any FACILITY-WIDE restrictions.

WHICH HAPS MUST BE REPORTED?

If you answered YES to any of the Questions D1-D4, you need to report your single largest HAP emission and your total HAP emissions for the year. You also need to report emission for any HAP for which you have an emission's restriction. eDEP will generate the forms needed to enter the data.

This form reports your total actual and potential facility wide emissions for HAPS for this year and that you reported on your previous source registration.

There is a set of lines for 6 HAPS. If you have more HAPS then you must:

1. Fill in the information for the first six
2. Click YES, in response to the question at the bottom of the form: "Do you have emissions to report for individual HAPs in addition to those above?"
3. Validate the form and correct any errors
4. The system will generate an additional HAP emissions forms (you will be returned to the <Related Forms – Transaction ID> page)
5. Complete and validate that form and return to this one.

Identify HAPS - CAS #for individual HAPS:

If the HAP is an individual chemical, write the CAS number
If the HAP is a formulation or mixture, write its name

Chemical name:

If the HAP is an individual chemical, write its name

Actual for previous year

For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information


Actual for year of record
Potential emissions at maximum capacity:

Calculate and enter this information

Facility-wide permitted--annual:
Facility-wide permitted--- short term:
Short term period:
Basis: DEP approval number or regulation:

Enter the requested information.

?Note: This applies to facility wide HAP restrictions ONLY

 **?NOTE:** Only enter restrictions that apply to the entire facility. Many restrictions apply only to particular emissions units. Those have already been reported on the emissions units forms

G. HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS TOTAL

This form reports the total facility wide actual, potential, and permitted, emissions of all HAPS combined on the basis of the information reported in Section F.

It also reports prior year total facility wide HAP emissions for electronic filers.

For electronic repeat filers: The system will calculate the actual and potential tons of HAPs automatically UNLESS you check the box that allows you to calculate this number manually

For paper filers: You must calculate this information yourself, on the basis of the information you submitted in Section F. You do NOT need to report on prior year total HAP emissions

H. FACILITY-WIDE TOTAL HAP EMISSIONS (IN TONS)


- | | |
|--|---|
| 1. Total HAP Emissions | Enter your Total HAP emissions for the facility below. Please enter any facility -wide restrictions on Total HAPs below as well: |
| a. Actual for previous year eDEP only | For electronic repeat filers: this information will be provided by the system
For paper filers: you do not need to provide this information
For new emission units this section is not applicable |
| b. Actual for year of record | For electronic repeat filers The system will calculate the actual and potential tons of HAPs automatically unless you check the box that allows you to calculate this number manually. |
| c. Potential at max capacity uncontrolled: | For paper filers: Calculate and enter this information. |
| d. Max allowed emissions (permitted) - annual: | Enter the requested information. |
| e. Max allowed emissions (permitted) – short term: | ?Note: Only enter restrictions that apply to the entire facility. Many restrictions apply only to particular emissions units. Those have already been reported on the emissions units forms |
| f. Short term period: | ?Note: This applies to facility wide HAP restrictions ONLY. Restrictions on fuel use, raw material use or products are reported in Question 4. |
| g. Basis for max allowed emissions: | DEP approval number or regulation: |

APPENDICES

SOURCE REGISTRATION PACKAGE

APPENDIX A: DEFINITIONS

ACTUAL EMISSIONS	Emissions emitted from the facility or emission unit for the specified time period.		
AIR CONTAMINANT	An air pollutant regulated by MassDEP		
CHEMICAL ABSTRACT SERVICE (CAS) NUMBER	<div><div></div><div>Note: HOCs, HYCs, VOCs all are individual chemical compounds and have a CAS number. Formulations and fuels are mixtures of chemicals and do NOT have CAS numbers. The individual components of the formulation have CAS numbers however, and these numbers are listed on the MSDS for the formulation.</div></div>		
CLEAN AIR ACT CHEMICAL (CAA CHEMICAL)	An air contaminant regulated by the Federal Clean Air Act. This includes criteria air pollutants, Hazardous Air Pollutants (HAP) pursuant to 42 U.S.C. 7401, Section 112 or any other substance regulated as a criteria pollutant, or any substance regulated pursuant to a New Source performance Standard (NSPS) under 40 CFR 60, or pursuant to a National Emission Standard for Hazardous Air Pollutants (NESHAPs) under 40 CFR 61 and 63.		
COMBUSTION DEVICE:	A combustion device means all equipment similar to process heaters used for combustion of organic vapors, including but not limited to, thermal incinerators, flares, and boilers.		
CRITERIA AIR POLLUTANT	One of the following compounds regulated by the Federal Clean Air Act and 310 CMR 7.0: PM10, PM2.5, NH3, VOC, CO, NOx, SO2, and Pb		
CRITICAL AREA OF CONCERN	Towns for which there are more stringent emission fuel standards		
	Adams	Haverhill	Quincy
	Amherst	Holden	Revere
	Arlington	Holyoke	Salem
	Athol	Lawrence	Sandwich
	Attleboro	Lee	Saugus
	Auburn	Leicester	Shrewsbury
	Belmont	Leominster	Somerset
	Boston	Longmeadow	Somerville
	Boylston	Lowell	Southbridge
	Braintree	Ludlow	Springfield
	Brookline	Lynn	Stoneham
	Cambridge	Malden	Taunton
	Canton	Medford	Wakefield
	Chelsea	Melrose	Waltham
	Chicopee	Millbury	Ware
	Dalton	Milton	Watertown
	Dedham	Needham	Webster
	East Longmeadow	New Bedford	West Boylston
	Easthampton	Newburyport	West Springfield
	Everett	Newton	Westfield
	Fall River	North Adams	Weymouth
	Fitchburg	Northampton	Winchester
	Gardner	Orange	Winthrop
	Grafton	Palmer	Woburn
	Greenfield	Peabody	Worcester
	Hadley	Pittsfield	

EMISSION METHOD (EM)	<p>The method used to determine the emissions. The methods are assigned the following codes:</p> <ol style="list-style-type: none"> Based on AP-42 emission factors Source Testing or emission measurement User supplied emission factors 																		
EMISSION UNIT (EU)	Any individual piece of equipment from which any air contaminant is emitted to the ambient air space, <i>for example, an individual boiler, a single degreaser, etc.</i>																		
ENFORCEABLE LIMIT	An operating restriction in a federally enforceable permit, plan approval, or certification, or a state or federal air pollution control regulation																		
FACILITY-WIDE POTENTIAL EMISSIONS:	<p>Facility-wide potential emissions are the maximum emissions that a <i>facility</i> is legally allowed to release. Normally facility-wide potential emissions equal the sum of the potential emissions for each emission unit. However some facilities have enforceable limits that imposed facility-wide restrictions on their operating rates or emissions. In this case facility-wide potential emissions equal the facility-wide restrictions. <i>Examples include facilities with 25% or 50% Certifications pursuant to 310 CMR 7.02 (11). Facility-wide potential emissions of a contaminant for such facilities equal 25% of the major source threshold for that air contaminant or 50% of the major source threshold for that contaminant, respectively. See Major Source Thresholds① for the thresholds for each air contaminant.</i></p>																		
FEDERAL REGISTER (FR)	The Federal publication that lists notices of proposed regulations and promulgated regulations																		
FORMULATION	<p>Any mixture containing an organic compound. A formulation is an organic material</p> <p> Note: A formulation will not have a CAS number, because it is a mixture. However, the CAS number and chemical characteristics of each organic compound chemical included in the mixture will be found on the MSDS① for the formulation provided by the supplier.</p>																		
HALOGENATED ORGANIC COMPOUND (HOC)	<p>The following specific chemicals are reported as HOCs.</p> <p>HALOGENATED ORGANIC COMPOUNDS (HOCs)</p> <table> <thead> <tr> <th>CAS #</th><th>Chemical Name</th></tr> </thead> <tbody> <tr> <td>127184</td><td>Perchloroethylene (tetrachloroethylene)</td></tr> <tr> <td>75092</td><td>Methylene chloride (chloromethane)</td></tr> <tr> <td>75694</td><td>CFC-11 (trichlorofluoromethane)</td></tr> <tr> <td>75718</td><td>CFC-12 (dichlorodifluoromethane)</td></tr> <tr> <td>75456</td><td>CFC-22 (chlorodifluoromethane)</td></tr> <tr> <td>75467</td><td>CFC-23 (trifluoromethane)</td></tr> <tr> <td>76142</td><td>CFC-114 (dichlorotetrafluoroethane)</td></tr> <tr> <td>76153</td><td>CFC-115 (chloropentafluoroethane)</td></tr> </tbody> </table>	CAS #	Chemical Name	127184	Perchloroethylene (tetrachloroethylene)	75092	Methylene chloride (chloromethane)	75694	CFC-11 (trichlorofluoromethane)	75718	CFC-12 (dichlorodifluoromethane)	75456	CFC-22 (chlorodifluoromethane)	75467	CFC-23 (trifluoromethane)	76142	CFC-114 (dichlorotetrafluoroethane)	76153	CFC-115 (chloropentafluoroethane)
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76142	CFC-114 (dichlorotetrafluoroethane)																		
76153	CFC-115 (chloropentafluoroethane)																		
HAZARDOUS AIR POLLUTANT (HAP)	An air contaminant listed by EPA as a HAP, pursuant to 42 U.S.C. 7401, Section 112. HAPs are listed on the BWP AQ CAA –Hazardous Air Pollutants Form																		

HYDROCARBONS (HYC)

The following specific chemicals are reported as HYCs.

HYDROCARBONS (HYCs)

CAS #	Chemical Name
67641	Acetone
74840	Ethane
74828	Methane
79209	Methyl acetate
71556	Methyl chloroform (1,1,1-trichloroethane)
76131	CFC-113 (trichlorotrifluoroethane)
593704	HCFC-31 (chlorofluoromethane)
306832	HCFC-123 (2,2-dichloro-1,1,1-trifluoroethane)
354234	HCFC-123a (1,2-dichloro-1,1,2-trifluoroethane)
2837890	HFCF-124 (2-chloro-1,1,1,2-tetrafluoroethane)
1717006	HCFC-141b (1,1-dichloro-1-fluoroethane)
75683	HCFC-142b (1-chloro-1,1-difluoroethane)
1615754	HCFC-151a (1-chloro-1-fluoroethane)
422560	HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane)
507551	HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane)
75105	HFC-32 (difluoromethane)
354336	HFC-125 (pentafluoroethane)
359353	HFC-134 (1,1,2,2-tetrafluoroethane)
811972	HFC-134a (1,1,1,2-tetrafluoroethane)
27987060	HFC-143a (1,1,1-trifluoroethane)
75376	HFC-152a (1,1-difluoroethane)
353366	HFC-161 (ethylfluoride)
690391	HFC-236fa (1,1,1,3,3,3-hexafluoropropane)
679867	HFC-245ca (1,1,2,2,3-pentafluoropropane)
24270664	HFC-245ea (1,1,2,3,3-pentafluoropropane)
431312	HFC-245eb (1,1,1,2,3-pentafluoropropane)
460731	HFC-245fa (1,1,1,3,3-pentafluoropropane)
431630	HFC-236ea (1,1,1,2,3,3-hexafluoropropane)
406586	HFC-365mfc (1,1,1,3,3-pentafluorobutane)
138495428	HFC43-10mee (1,1,1,2,3,4,4,5,5,5-decafluoropentane)
163702076	C4F9OCH3 (1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane)
163702087	(CF3)2CFCF2OCH3 (2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane)
163702054	C4F9OC2H5 (1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane)
163702065	(CF3)2CFCF2OC2H5 (2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane)

Cyclic, branched, or linear, completely fluorinated alkanes,
Cyclic, branched, or linear, completely fluorinated ethers with no saturations,
Cyclic, branched, linear, or completely fluorinated tertiary amines with no unsaturations,
Cyclic, branched, or linear, completely methylated siloxanes,
Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbons and fluorine.

INSIGNIFICANT ACTIVITIES

Activities and their associated emissions that do not need to be reported in the source registration

- ✓ Open burning conducted in accordance with the requirements of 310 CMR 7.07(2), 7.07(3)(a) and 7.07(3)(e)
- ✓ Office activities and the equipment and implements used there in such as typewriters, printers and pens
- ✓ Interior maintenance activities and the equipment and implements used therein, such as cleaning products and air fresheners. This does not include any cleaning of production equipment or activities regulated by 310 CMR 7.18

- ✓ Bathroom and locker room ventilation and maintenance
- ✓ Copying and duplication activities for internal use and for support of office activities at the facility
- ✓ The activities not regulated by 310 CMR 7.18 in maintenance shops, such as welding, gluing, soldering
- ✓ First aid or emergency medical care provided at the facility, including related activities such as sterilization and medicine preparation
- ✓ Laundry operations that service uniforms or other clothing used at the facility that are not regulated by 310 CMR 7.18
- ✓ Architectural maintenance activities conducted to take care of the buildings and structures at the facility, including repainting, re-roofing, and sandblasting
- ✓ Exterior maintenance activities conducted to take care of the grounds of the facility, including parking lots and lawn maintenance
- ✓ Food preparation to service facility cafeterias and dining rooms
- ✓ The use of portable space heaters which reasonably can be carried and relocated by an employee
- ✓ Liquid petroleum gas (LPG) or petroleum fuels used to power the facility's mobile equipment and not otherwise regulated by the Department
- ✓ Emergency vents not subject to the accidental release regulations
- ✓ Surface coating and painting processes which exclusively use non-refillable aerosol cans
- ✓ Vacuum cleaning systems used exclusively for commercial or residential housekeeping
- ✓ Ventilating systems used exclusively for heating and cooling buildings, for the comfort of people living or working within the building serviced by said system, which EPA has determined need not be contained in an operating permit
- ✓ Ventilating and exhaust systems for laboratory hoods used:
 - By academic institutions for academic purposes
 - By hospitals and medical care facilities used for medical care purposes and medical research only
 - By laboratories, which perform laboratory, scale activities as defined by OSHA
 - By facilities for quality assurance and quality control testing and sampling activities
- ✓ Surface coating and printing processes used exclusively for educational purposes in educational institutions
- ✓ Kilns or ventilating hoods for art or ceramics curricula at colleges, primary or secondary schools

MAJOR SOURCE THRESHOLD

The emission threshold for being classified as a major source. Major sources are required to apply for an Air Operating permit pursuant to 310 CMR Appendix C, or obtain a restriction of their potential to emit an air contaminant pursuant 310 CMR 7.02(9) or a 25%/50% Certification at the 50% level pursuant to 310 CMR 7.02(11) if their emissions are equal to or greater than the applicable threshold

Pollutant Major Source Threshold in Tons per Year (TPY)

VOC	Potential to emit 50 TPY
NO _x	Potential to emit 50 TPY
SO ₂	Potential to emit 100 TPY
TSP	Potential to emit 100 TPY
PM ₁₀	Potential to emit 100 TPY
CO	Potential to emit 100 TPY
HAPS	Potential to emit 10 TPY of any one HAP OR 25 TPY of all HAPs

MATERIAL SAFETY DATA SHEET (MSDS)

A fact sheet listing the chemical components and the chemical, physical, hazard, and toxic characteristics of any formulation or chemical compound. Chemical manufacturers are required to prepare MSDS sheets and ship them with each chemical product they sell.

NUMBERING STACKS, POINTS, AND SEGMENTS

SSEIS (Stationary Source Emissions Inventory System), MassDEP's computer system that stores source registration data, automatically assigns numbers to a facility's stacks, points (emission units) and segments (fuels, organic materials, and other raw materials used in the emission unit). Figure A-1 shows how facilities are configured and stacks, points, and segments are numbered in SSEIS.

The numbers SSEIS assigns are always sequential and are automatically updated if a point, stack or segment is added or eliminated at the facility. As a result, the number assigned to a particular point, stack or segment will change from year to year, if a facility alters its equipment or raw materials.

- ✓ If a facility adds a point (or a stack, or a segment) on one year's source registration that new point (stack, or segment) will be assigned the next available sequential number on the subsequent year's Side-by-Side Computer Report.

For example:

In 1996, a facility had one stack and three emission units: a degreaser, a spray coater, and a roll coater. The facility installed an additional spray coater in 1997.

The "Side-by-Side" report sent to the facility in 1998 (the 1998 Report) listed 3 emission units as follows:

Point #1: "Degreaser"

Point #2: "Spray Coater"

Point #3: "Roll Coater"..

When the facility submitted its 1998 source registration it included a BWP AQ AP-2 Emission Unit: Process Emissions form for the new spray coater unit it had installed during 1997. The facility identified this new spray coater as "Spray Coater B".

The Side by Side Computer Report sent to the company in 1999 (the 1999 Report) showed FOUR emission units, with the new spray coater added as "Point #4 as follows:

Point #1: Degreaser

Point #2: Spray Coater

Point #3: Roll Coater

Point #4: Spray Coater B

- ✓ If a point (or stack or segment) is eliminated, the number assigned to all of the points (or stacks or segments) with a higher number than the one that was eliminated will drop by one.

For example:

The same facility eliminated its first spray coater during 1998. So it crossed off Point #2 on the 1999 Report when it submitted it to MassDEP. On the "Side-by-Side" report the facility receives in 2000 (the 2000 Report) the points would be renumbered as follows:

Point #1: Degreaser

Point #2: Roll Coater

Point #3: Spray Coater B



NOTE: *The "Roll Coater" has become Point #2, and "Spray Coater B" has become Point #3. There is no Point #4, and Point #1 "Degreaser" is unchanged.*

Stacks and segments are renumbered in the same way if a stack or segment is added or eliminated. New stacks or segments are assigned the next sequential number. If a stack or segment is eliminated, the number assigned to those stacks or segments with a higher number than the stack or segment that was eliminated drops by one.

However segment numbering is a little different than point and stack numbering. Points and stacks are assigned a unique number: there is only one stack assigned the number "1", only one stack assigned the

number "2" etc. Similarly, regardless of what stack the point is assigned to, there is only one point assigned the number "1", only one point assigned the number "2", etc. However, segment numbering happens WITHIN a point, so a given segment number can be repeated.

For example:

The facility above uses one degreasing chemical: "Clene-Sol"; three different paints in the "Roll Coater": "red paint", "green paint" and "blue paint"; and two paints in "Spray Coater B" "yellow paint" and the same "red paint" that is used in the "Roll Coater".

Point #1 "Degreaser" would have one segment, numbered in the following way:

Segment #1: "Clene-Sol"

Point #2 "Roll Coater" would have three segments, numbered in the following way

Segment #1: "red paint"

Segment #2: "green paint"

Segment #3: "blue paint"

Point #3 "Spray Coater B" would have two segments, numbered as follows:

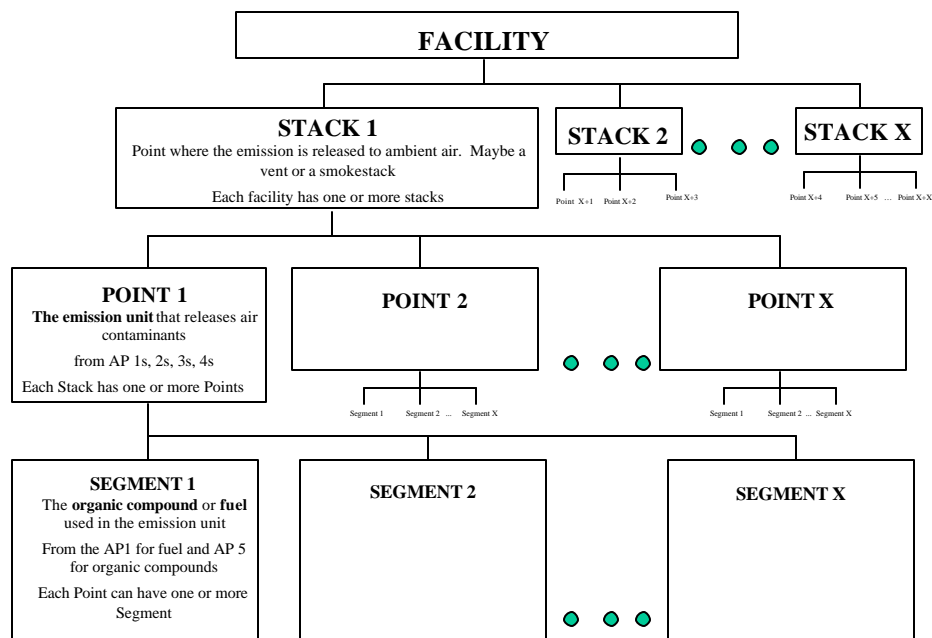
Segment #1: "yellow paint"



Segment #2: "red paint"

 **Note:** The example illustrates three important points.

1. Note that three different segments were assigned the number "1", and two different segments were assigned the number "2".
2. Note that even though the "red paint" is the exact same formulation, it still shows up as two different segments because it is used in two different emission units.
3. Note that even though the "red paint" is the exact same formulation, it can be assigned two different segment numbers. (It could just as easily have been assigned # 1 in both Point #2 and Point #3, however, because "red paint" was entered first when the data for Point #2 was entered into SSEIS, and was entered second when the data for Point #3 was entered into SSEIS, "red paint" became Segment #1 in Point #2, and Segment #2 in Point #3.

.TIP: Because the number that SSEIS assigns to the emissions unit (or stack or segment) can change, it is important that the facility assign its own identification name/number to the unit. Because this name/number will NOT change (unless the facility changes it) it can be used to keep track of stacks, points, and segments on the Side-by-Side Report after a facility changes its operations.



ORGANIC COMPOUND	Any chemical compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbonates, metallic carbides, and ammonium carbonates  Note: VOCs, HOCs, and HYCs are all Organic materials
ORGANIC MATERIAL	Any organic chemical compound① or mixture that contains an organic chemical compound. A formulation is an organic material.  Note: All VOCs, HOCs, and HYCs and mixtures containing VOCs, HOCs, or HYCs are organic materials.
OZONE SEASON	The 153 days from May 1 to September 30
PERMITTED EMISSIONS	The maximum emissions allowed under the terms of the applicable permit or plan approval

POINT

An emission unit. The "Side-by-Side" Computer Printout points are the emission units on which a facility is required to report.

POTENTIAL EMISSIONS

Potential emissions are the maximum allowable emissions under the terms of a federally enforceable plan approval or permit, or, if no plan approval or permit is required, under the applicable regulations.

Potential emissions determine your facility's regulatory status. Potential emissions also make it possible to estimate the worse case ambient air quality in order to make a conservative estimate of the facility's impact on ambient air quality.

POTENTIAL EMISSIONS equal the emissions that would result if the facility

- ✓ Emitted air contaminants at the MAXIMUM ALLOWABLE EMISSIONS RATE per unit of product produced or unit of raw material used,
- ✓ While operating at the maximum allowable rate,
- ✓ For the maximum number of hours per year possible.

GROUND RULES:

A) When determining the MAXIMUM ALLOWABLE EMISSIONS RATE of each air contaminant:

1. The maximum emissions or emission rate may be restricted under a federally enforceable limit contained in a plan approval (BWPAQ-01, 02 or 03), Restricted Emission Status (BWPAQ-09), other permit (e.g., *Prevention of Significant Deterioration (PSD)*), regulation (e.g., *restriction on the sulfur content of fuel in 310 CMR 7.05*), or in a state or federal air pollution control regulation. If your plan approval or the applicable regulation specifies a maximum emission rate, use that rate to calculate your potential emissions.
2. Assume that the facility ONLY uses the fuel, the coating, or other raw material that generates the most pollution per amount used.

For example,

- ✓ *If you are permitted to use natural gas and oil, assume you use nothing but natural gas when you calculate your potential NO_x emissions, and assume you use only oil when calculating your potential SO₂ emissions.*
- ✓ *If you are permitted to use three different coatings, and one has a VOC of 5 pounds per gallon, another has a VOC content of 4 pounds per gallon and the third has a VOC content of 3 pounds per gallon, assume you only use the 5 pound per gallon formulation when calculating your potential VOC emissions.*

3. Assume the facility operates any pollution control equipment required by a plan approval or a regulation in accordance with the terms of the plan approval or regulation.

For example,

- ✓ *The facility plan approval specifies that the facility will operate a bag house that removes TSP at 95% efficiency, and the facility generates 100 pounds of pollution per 1000 pound of product produced before it is controlled. The maximum emission rate used to calculate potential emissions would equal 5.0% of 100 or 5 pounds per 1000 pounds of product produced.*



CAUTION: If the facility has installed air pollution control equipment voluntarily, (that is, there is no regulatory or plan approval requirement to install and operate the equipment) then the facility may NOT be considered when determining the facility's potential emissions. The pollution control equipment does not reduce a facility's potential emissions because the facility is legally allowed to operate without the control equipment.

B) When determining the MAXIMUM OPERATING RATE and MAXIMUM ALLOWABLE HOURS OF OPERATION:

The maximum operating rate may be restricted under an enforceable limit contained in a plan

approval (BWPAQ-01, 02 or 03), Restricted Emission Status (BWP AQ-09), other permit (e.g., *Prevention of Significant Deterioration (PSD)*), regulation (e.g., *restriction on the hours of operation of an emergency generator in 310 CMR 7.02*) or in a state or federal air pollution control regulation. These restrictions may be expressed as:

- ✓ Allowable capacity of the equipment
- ✓ Limits on the hours of operation
- ✓ Limits on the pounds or gallons of materials used

If such a restriction exists, use that restriction when calculating the potential emissions.

If the facility is NOT restricted by permit or regulation:

- ✓ The maximum operating rate is the maximum rate at which the equipment can be operated (e.g., *the maximum firing rate of a boiler*)
- ✓ The maximum hours of operation are 8760 (i.e., *[24 hours per day] x [365 days per year]*).

C) When a PERMIT OR PLAN APPROVAL RESTRICTION APPLIES TO SEVERAL EMISSION UNITS but not the whole facility you may divide that usage among the emission units, as you wish for purposes of this inventory. Please note that you have done so in the comment section of the form.

For example,

A facility has three boilers. Normally boilers 1 and 2 operate and boiler 3 is held in standby mode. The three boilers are restricted to burning 40,000 gallons of oil per month based on a 12 month rolling average. For purposes of completing this form, the facility may assume the fuel would be burned in equal amounts in boilers 1 and 2 for determining potential emissions. Alternatively, they may use any other formula to apportion the potential emissions to the different emission units.



Note: Apportioning the maximum allowed emissions among the emission units that share a restriction does NOT place a further restriction on your operating flexibility.

D) A facility may also have additional restrictions that LIMIT FACILITY-WIDE EMISSIONS. Facility-wide potential emission equal the facility-wide limit imposed on the facility.

For example,

- ✓ *If your facility has filed a certification form with the department pursuant to 310 CMR 7.02 (50% or 25% emission cap notification) potential emissions from your facility would equal 50% of the major threshold for the pollutants if your facility holds a 50% certification. Potential emissions would equal 25% of the threshold if your facility holds a 25% certification unless the facility has more stringent emission limits under plan approval(s).*

RESPONSIBLE OFFICIAL

IF THE FACILITY HAS THIS TYPE OF OWNERSHIP:	THE RESPONSIBLE OFFICIAL MUST BE:
Sole proprietorship	The sole proprietor
Partnership	A general partner with the authority to bind the partnership

Corporation or a non-profit corporation	<p>A corporate official with authority to bind the corporation such as a:</p> <ul style="list-style-type: none"> ✓ President, ✓ Secretary, ✓ Treasurer, ✓ Vice president of the corporation in charge of a business function, ✓ Any other person who performs similar policymaking or decision-making functions of the corporation.
Municipality or other public agency	<p>A principal executive officer</p> <p>A ranking elected official who is empowered to enter into contracts on behalf of the municipality or public agency.</p>

SEGMENT

The fuel, organic material, or other raw material that is used in an emission unit, and whose use results in the release of air contaminants. The "Side-by-Side" computer printout has a section for each "segment" in each "point".

STACK

The stack or vent through which air contaminants are released to the environment. In SSEIS, each "point" is associated with a stack. Vents are commonly aggregated together as one "stack" in SSEIS.

**SUBSTANTIVE
COMPLIANCE DATE**

The first date by which a facility is required to comply with a MACT emission standard or other substantive regulatory requirements (*i.e., leak detection and repair programs, work practice measures, housekeeping, etc., but NOT a notice requirement*).

**VOLATILE ORGANIC
COMPOUND (VOC)**

Any compound of carbon that participates in atmospheric photochemical reactions. For the purpose of determining compliance, VOC is measured by the applicable reference test methods specified in 40 CFR 60. This definition includes all organic compounds **EXCEPT** the following:

CAS #	Chemical Name
67641	Acetone
506876	Ammonium carbonate
37210165	Carbon dioxide
630080	Carbon monoxide
463796	Carbonic acid
74828	Methane
74840	Ethane
79209	Methyl acetate
71556	Methyl chloroform (1,1,1-trichloroethane)
75092	Methylene chloride (dichloromethane)
98566	Parachlorobenzotrifluoride (PCBTF)
127184	Perchloroethylene (tetrachloroethylene)
75694	CFC-11 (trichlorofluoromethane)
75718	CFC-12 (dichlorodifluoromethane)
75456	CFC-22 (chlorodifluoromethane)
76131	CFC-113 (trichlorotrifluoroethane)
76142	CFC-114 (dichlorotetrafluoroethane)
76153	CFC-115 (chloropentafluoroethane)
75467	FC-23 (trifluoromethane)
593704	HCFC-31 (chlorofluoromethane)
306832	HCFC-123 (2,2-dichloro-1,1,1-trifluoroethane)
354234	HCFC-123a (1,2-dichloro-1,1,2-trifluoroethane)
2837890	HFCF-124 (2-chloro-1,1,1,2-tetrafluoroethane)
1717006	HCFC-141b (1,1-dichloro-1-fluoroethane)
75683	HCFC-142b (1-chloro-1,1-difluoroethane)
1615754	HCFC-151a (1-chloro-1-fluoroethane)
422560	HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane)
507551	HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane)
75105	HFC-32 (difluoromethane)
354336	HFC-125 (pentafluoroethane)
359353	HFC-134 (1,1,2,2-tetrafluoroethane)
811972	HFC-134a (1,1,1,2-tetrafluoroethane)
27987060	HFC-143a (1,1,1-trifluoroethane)
75376	HFC-152a (1,1-difluoroethane)
353366	HFC-161 (ethylfluoride)
690391	HFC-236fa (1,1,1,3,3,3-hexafluoropropane)
679867	HFC-245ca (1,1,2,2,3-pentafluoropropane)
24270664	HFC-245ea (1,1,2,3,3-pentafluoropropane)
431312	HFC-245eb (1,1,1,2,3-pentafluoropropane)
460731	HFC-245fa (1,1,1,3,3-pentafluoropropane)
431630	HFC-236ea (1,1,1,2,3,3-hexafluoropropane)
406586	HFC-365mfc (1,1,1,3,3-pentafluorobutane)
138495428	HFC43-10mee (1,1,1,2,3,4,4,5,5,5-decafluoropentane)
163702076	C4F9OCH3 (1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane)
163702087	(CF3)2CF2OCF2CH3 (2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane)
163702054	C4F9OC2H5 (1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane)
163702065	(CF3)2CF2OCF2CH3 (2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane)

Cyclic, branched, or linear, completely fluorinated alkanes,
Cyclic, branched, or linear, completely fluorinated ethers with no saturations,
Cyclic, branched, linear, or completely fluorinated tertiary amines with no unsaturations,
Cyclic, branched, or linear, completely methylated siloxanes,
Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbons and fluorine.

APPENDIX B: LIST OF ACRONYMS

ACRONYM	DEFINITIONS / EXPLANATIONS / COMMENTS
AP- 42	Reference to manual containing emission factors (http://www.epa.gov/ttn/chief)
APCE	Air Pollution Control Equipment
AQ	Air Quality
AQCR	Air Quality Control Region
BACT	Best Achievable Control Technology
BTU	British Thermal Unit - a measure of energy
BWP	Bureau of Waste Prevention
BWP AQ – SR	Air Pollution form for Source Registration identifying information.
BWP AQ 01	Limited Plan Approval permit application
BWP AQ 02	Non-Major Comprehensive Plan Approval permit application
BWP AQ 03	Major Comprehensive Plan Approval permit application
BWP AQ 09	Restricted Emission Status Plan Approval permit application
BWP AQ AP – 1	Air Pollution form for combustion-related pollution
BWP AQ AP – 2	Air Pollution form for non-combustion pollution
BWP AQ AP – 3	Air Pollution form for incineration
BWP AQ AP – 4	Air Pollution form for storage and transfer of organic compounds
BWP AQ AP – 5	Air Pollution form for each AP-2 form, which also contained one of these types of solvents: VOC ①, HOC ①, HYC ①.
BWP AQ AP – 6	Air Pollution form for non-combustion pollution of these solvents (VOC, HOC, HYC), both actual and potential: a sum of previous data.
BWP AQ CAA- HAPS	CAA List of hazardous air pollutants by chemical name with CAS#
BWP AQ ES	Air Pollution form for typical ozone day.
BWP AQ Form	Air Pollution reporting form or permit/plan approval application
CAA	Clean Air Act
CAS	Chemical Abstract Service
CFC(S)	Chlorofluorocarbons - Class I ODC
CFR	Code of Federal Regulation
CFT	Cubic Feet
CMR	Code of Massachusetts Regulations
CO	Carbon Monoxide
CPA	Comprehensive Plan Approval
DEP	Department of Environmental Protection - Massachusetts
DEQE	Department of Environmental Quality Engineering, now MassDEP
EM	Emission Method
ENF	Environmental Notification Form
EPA	Environmental Protection Agency - Federal
EPCRA	Emergency Planning and Community Right-to-Know Act
EU	Emission Unit
FC(S)	Fluorocarbons
FIP	Federal Implementation Plan
FPS	Feet per Second
FR	Federal Register
FT	Feet
FUE	Fuel Utilization Equipment
FUF	Fuel Utilization Facility
HAP	Hazardous Air Pollutants
HCFC	Hydrochlorofluorocarbons - Class II ODS
HOC	Halogenated Organic Compounds
HYC	Hydrocarbons
ID	Identification
LAER	Lowest Achievable Emission Rate

LBS	Pounds
LCON	Code for the Regional Office
LPA	Limited Plan Approval
MACT	Maximum Achievable Control Technology
MADEP	Massachusetts DEP
MMBTU	Million British Thermal Units
MMCF	Million Cubic Feet
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NESHAPS	National Emission Standard for Hazardous Air Pollutants
NH3	Ammonia
NO2	Nitrogen Dioxide
NOx	Nitrogen Oxides - "knocks"
NSPS	New Source performance Standard
Ods	Ozone Depleting Substances
Pb	Chemical abbreviation for Lead
PCBTF	Parachlorobenzotrifluoride
PM	Particulate Matter
PM10	Particulate Matter, 10 microns or smaller
PM2.5	Particulate Matter, 2.5 microns or smaller
PPM	Parts per Million
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RCRA	Resource Conservation and Recovery Act: program that establishes hazardous waste management rules
REC	Recorder
RES	Restricted Emission Status
SCC	Source Classification Code
SEG	Segment
SIC	Standard Industrial Classification
SIP	State Implementation Plan -- the federally approved regulations, permits and programs that implement the Federal Clean Air Act in the State.
SNAP	Significant New Alternative Policy
SO2	Sulfur Dioxide – chemical abbreviation
SOX	Sulfur Oxides - "socks"
SR	Source Registration
SSEIS	Stationary Source Emission and Inventory System
TPY	Tons per Year
TSP	Total Suspended Particulates
TURA	Toxics Use Reduction Act
USGS	United States Geological Survey
UTM HOR	Universal Transverse Mercator horizontal coordinate (the northerly coordinate)
UTM VER	Universal Transverse Mercator vertical coordinate (the easterly coordinate)
VMS	Volatile Methyl Siloxanes
VOC(S)	Volatile Organic Compounds
WGT	Weight
YR	Year

APPENDIX C: CALCULATIONS

SECTION C.1: ESTIMATING EMISSIONS

SECTION C.1.1: BASIC METHODOLOGY

Step 1: Determine if there are there any Federal or State regulations, permits, or plan approvals which limit the operation(s) at the facility. The following regulations that may limit operations:

- ✓ Federal NSPS and NESHAPS,
- ✓ 310 CMR 7.02 preconstruction approvals,
- ✓ RACT limits established in either regulation or source specific approvals;
- ✓ Or emission limits found in 310 CMR 7.00: Air Pollution Control Regulations such as 310 CMR 7.02, 7.03, 7.05, 7.02(8) etc.

If your facility has an operating restriction, that restriction becomes an "ENFORCEABLE LIMIT" and must be used to calculate potential emissions. This restriction may limit hours of operation, maximum operating rate, or emission rates.


If your facility does NOT have an operating restriction, then you must calculate POTENTIAL emissions from the maximum capacity of the equipment, operated 24 hours per day 365 days per year and the applicable emission factor for that equipment. An emission factor is an estimate of the quantity of air contaminant released as a function of the quantity of raw materials used, the operating rate, or the hours of operation. The emission factors for many fuels, pathological incinerators, VOCs are included below.

Step 2. Apply the formula below to calculate potential and actual emissions

POTENTIAL EMISSIONS are determined from the following equation:

- ✓ IF your facility does NOT have an operating restriction

$$\text{POTENTIAL EMISSIONS} = [\text{EMISSION FACTOR}] \times [\text{MAXIMUM CAPACITY}] \times [8760 \text{ hours of operation per year}]$$

 **Note:** 8760 hours per year = (365 days per year) x (24 hours per day)

- ✓ IF your facility HAS an enforceable limit you will need to substitute the restriction for the appropriate factor in the equation presented above, as follows:

If your facility has a restriction on...	Substitute
Operating capacity	[Maximum allowed operating capacity] for [maximum capacity]
Operating hours	[Maximum allowed hours of operation] for [8760 hours of operation per year]
Emission Rate	Maximum allowed emission rate from the regulation, permit or plan approval, or stack testing results for the emission factors in AP-42
Total Emissions	[Maximum total emissions] for [maximum operating capacity] x [8760 hours of operation per year] x [emission factor]
Characteristics of the Raw material	The emission factors appropriate to that raw material for the emission factors in AP-42

ACTUAL EMISSIONS for ALL facilities are determined by substituting the actual amount of raw material used for the maximum possible hours per year and the maximum capacity as follows:

ACTUAL EMISSIONS = [APPROPRIATE EMISSION FACTOR] x [ACTUAL RAW MATERIALS USED or ACTUAL HOURS OF OPERATION] x [percent of EMISSIONS NOT CONTROLLED BY AIR POLLUTION CONTROL EQUIPMENT REQUIRED PURSUANT TO A PLAN APPROVAL OR REGULATION]

Example Calculations: Formulas and Example calculations for Process Emissions are provided in Section C.1.2 below. Section C.1.3 has formulas, emission factors, and sample calculations for fuel utilization facilities.

SECTION C.1.2: EXAMPLE CALCULATIONS FOR PROCESS EMISSIONS:

This section is divided into two parts:

- Section C.1.2.1 Example Calculations for Coating Operations Using VOC Coatings
- Section C.1.2.2 Example Calculations for Other Process Emissions.

Section C.1.2.1 Example Calculations for Coating Operations Using VOC Coatings





<p align="center">TABLE C.1.2-1</p> <p align="center">Wood Products Surface Coating Paint Spray Booth With No Operating Restrictions</p>	
EMISSION UNIT DESCRIPTION:	<p>NOMASSDEP PERMITS, NO FEDERALLY ENFORCEABLE RESTRICTIONS APPLY, NO LIMITS ON THE OPERATING HOURS MAXIMUM CAPACITY & EQUIPMENT DESIGN:</p> <ul style="list-style-type: none"> -Spray gun: 3.0 gallons per hour -Paint: The paint with the highest VOC concentration AS APPLIED contains 5.5 pounds of VOC per gallon <p> NOTE ON "AS APPLIED": When calculating VOC emissions you need to include the VOCs in the coating as purchased as well as any solvents you add to thin it. Thus the MSDS may say that the paint had 5 pounds of VOCs per gallon, but the as applied number is 5.5 lbs. per gallon because of added solvents. You also need to include any solvents you used to clean the production equipment.</p> <p>The paint with the highest solids concentration has 3.5 pounds of solids per gallon of paint</p> <ul style="list-style-type: none"> -90% overspray <p>ACTUAL OPERATIONS: 5678 gallons of paint as applied (paint plus solvent thinner) used</p>
POLLUTANT	EXAMPLE CALCULATIONS
VOC POTENTIAL EMISSIONS	<p>$[3.0 \text{ gallons of paint} + \text{thinner applied per hour}] \times [5.5 \text{ pounds of VOC per gallon of applied paint}] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ pounds}] = 72.3 \text{ tons VOC year}$</p> <p>*The emission factor for VOCs = All of the VOCs in the applied paint and solvent thinners become VOC emissions</p> <p>Alternatively you can use the formula:</p> <p>$\{[(\text{Gallons of paint used AS PURCHASED per hour}) \times (\text{pounds of VOC per gallon AS PURCHASED})] + [(\text{gallons of paint thinner applied per hour}) \times (\text{pounds of VOC per gallon of paint thinner})]\} \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ pounds}] = \text{tons VOC per year}$</p>
ACTUAL EMISSIONS	<p>$[5678 \text{ gallons of as applied paint used}] \times [5.5 \text{ pounds of VOC per gallon}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 15.6 \text{ tons}$</p> <p>You can also use the alternative formula:</p> <p>$\{[\text{Gallons of paint used (as purchased)}] \times [\text{pounds of VOC per gallon (as purchased)}]\} + \{[\text{gallons of solvent thinner used}] \times [\text{pounds of VOC per gallon of solvent thinner}]\}$</p>
PARTICULATE (TSP) POTENTIAL EMISSIONS	<p>$[3.0 \text{ gallons of paint (as applied) per hour}] \times [3.5 \text{ pounds of solids per gallon (as applied)}] \times [0.90 \text{ (the weight fraction of the paint that is over sprayed)}] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ pounds}] = 41.4 \text{ tons}$</p> <p>* The emission factor for spray painting equals the amount of solids in the paint as applied multiplied by the weight fraction of the paint that is over sprayed</p>
ACTUAL EMISSIONS	<p>$5678 \text{ gallons of paint used}] \times [3.5 \text{ pounds of solids per gallon}] \times [0.90 \text{ (the weight fraction of the paint that is over sprayed)}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 8.9 \text{ tons}$</p>

TABLE C.1.2-2

**Calculations For Wood Products Surface Coating Paint Spray Booth Used In Table C.1.2-1,
With Operating Restrictions**

EMISSION UNIT DESCRIPTION:	<p>NOMASSDEP PERMITS</p> <p>SUBJECT TO 310 CMR 7.03(16):</p> <ul style="list-style-type: none"> -VOC emissions capped at 2.5 tons per month for the entire facility, OR Use of all VOC containing compounds capped at 670 gallons per month for the entire facility -Properly installed and maintained fiber mat filter capable of 97% capture of particulate emissions in operation -HLVP Spray Coating or electrostatic transfer technology (Assume a 65% transfer efficiency and a 35% overspray -- Overspray percentage = 100 - transfer efficiency percentage) <p> NOTE ON TRANSFER EFFICIENCY: For HLVP or electrostatic transfer, you can assume a 65% transfer efficiency, unless you have better data.</p> <p>VOC in the coating subject to RACT limitation 310 CMR 7.18 (23) Wood Products</p> <ul style="list-style-type: none"> -The paint with the highest VOC concentration is limited to 23.4 pounds of VOC per gallon of solids as applied (See  NOTE on as applied in Table 3.1.2-1) - NO limits on the operating hours <p>MAXIMUM CAPACITY & EQUIPMENT DESIGN:</p> <ul style="list-style-type: none"> -The paint with the highest VOC concentration has 5.1 pounds of VOC per gallon of paint -The solid content of the paint as applied is 3.9 pounds of solids per gallon of paint <p> Note: The paint as applied has 26 percent solids by volume (gallons of solid/gallons of paint) so the VOC content is 19.62 pounds of VOC per gallon of solids applied, which complies with the limit for VOC coatings in 310 CMR 7.18 (23).)</p> <ul style="list-style-type: none"> -Spray gun: 3.0 gallons per hour <p>ACTUAL OPERATIONS</p> <ul style="list-style-type: none"> -5678 gallons of paint as applied used
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POLLUTANT	EXAMPLE CALCULATIONS
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VOC

POTENTIAL EMISSIONS

[2.5 tons of VOC emissions per month] x [12 months per year] = *30 tons per year*

Note: The potential emissions *for this emission unit* are 30 tons per year, even if the facility had other emission units that used VOCs, because the facility could choose to operate only this emission unit in a given year. The *facility-wide* potential emissions would also equal 30 tons per year, because 310 CMR 7.03 (13) only applies if the facility's VOC emissions do not exceed 30 tons per year. If facility-wide emissions exceed 30 tons per year, a plan approval under 310 CMR 7.02 (2) or 7.02 (13) would be required for this paint spray booth. That plan approval would specify operating restrictions, which would be used in these calculations.

ACTUAL EMISSIONS




[5678 gallons of paint as applied used] x [5.1 pounds of VOC per gallon] x [1 ton / 2000 lbs.] = *14.5 tons*


You can also use the alternative formula:

$$[(\text{Gallons of paint used as purchased}) \times (\text{pounds of VOC per gallon of paint as purchased})] + [(\text{gallons of solvent thinner used}) \times (\text{pounds of VOC per gallon of solvent thinner used})] \times 1 \text{ ton} / 2000 \text{ lbs.}]$$

TABLE C.1.2-2

**Calculations For Wood Products Surface Coating Paint Spray Booth Used In Table C.1.2-1,
With Operating Restrictions**

EMISSION UNIT DESCRIPTION:	<p>NOMASSDEP PERMITS</p> <p>SUBJECT TO 310 CMR 7.03(16):</p> <ul style="list-style-type: none"> -VOC emissions capped at 2.5 tons per month for the entire facility, OR Use of all VOC containing compounds capped at 670 gallons per month for the entire facility -Properly installed and maintained fiber mat filter capable of 97% capture of particulate emissions in operation -HLVP Spray Coating or electrostatic transfer technology (Assume a 65% transfer efficiency and a 35% overspray -- Overspray percentage = 100 - transfer efficiency percentage) <p> NOTE ON TRANSFER EFFICIENCY: For HLVP or electrostatic transfer, you can assume a 65% transfer efficiency, unless you have better data.</p> <p>VOC in the coating subject to RACT limitation 310 CMR 7.18 (23) Wood Products</p> <ul style="list-style-type: none"> -The paint with the highest VOC concentration is limited to 23.4 pounds of VOC per gallon of solids as applied (See  NOTE on as applied in Table 3.1.2-1) - NO limits on the operating hours <p>MAXIMUM CAPACITY & EQUIPMENT DESIGN:</p> <ul style="list-style-type: none"> -The paint with the highest VOC concentration has 5.1 pounds of VOC per gallon of paint -The solid content of the paint as applied is 3.9 pounds of solids per gallon of paint <p>( ?Note: The paint as applied has 26 percent solids by volume (gallons of solid/gallons of paint) so the VOC content is 19.62 pounds of VOC per gallon of solids applied, which complies with the limit for VOC coatings in 310 CMR 7.18 (23).)</p> <ul style="list-style-type: none"> -Spray gun: 3.0 gallons per hour <p>ACTUAL OPERATIONS</p> <ul style="list-style-type: none"> -5678 gallons of paint as applied used
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POLLUTANT	EXAMPLE CALCULATIONS
POTENTIAL EMISSIONS	<p>[11,765 gallons of paint (The maximum gallons of paint as applied that can be used, given the VOC restriction)*] x [3.9 pounds of solids per gallon of paint] x [0.35 (the weight fraction of the paint that is over sprayed)] x [0.03 (the percent of the overspray that is NOT controlled by the fabric filter)]** = <i>482 pounds (0.24 tons) of particulates</i></p> <p>* NOTE: The maximum gallons of paint that can be used in a year, given the restrictions on VOC emissions is calculated as follows:</p> <p>[12 months] x [2.5 tons of VOC per month (the VOC emission cap)] x [2000 tons per lbs.] / [5.1 pounds of VOC per gallon of paint (as applied)] = 11,765 gallons</p>
ACTUAL EMISSIONS	<p>[5678 gallons of paint (as applied) used] x 3.9 pounds of solids per gallon of paint as applied] x [0.35 (the weight fraction of the paint that is over sprayed)] x [0.03 (the percent of the overspray that is NOT controlled by the fabric filter)]. = <i>233 pounds (0.12 tons) of particulates</i></p>


Section C.1.2.2: Example Calculations for Other Process Emissions

TABLE C.1.2-3:

Formulas For "Other Process Emissions":

Note: You must obtain the applicable emission factors from stack testing, your permit or plan approval for emission units, the applicable regulations, or, if no other information is available from EPA's AP-42 Emission Factors (<http://www.epa.gov/ttn/chief/>)

POTENTIAL EMISSIONS $[\text{Maximum processing capacity in lbs. per hour}] \times [\text{Emission Factor (lbs. of contaminant emitted per lb. of raw material processed)}] \times [8760 \text{ hours of operation per year}] \times 1 \text{ ton} / 2000 \text{ lbs.} = \text{tons of contaminant emitted per year.}$

 **NOTE:** If a permit restriction applies, substitute use the maximum allowed processing rate for the maximum operating capacity, the maximum allowed emission rate for the emission factor, or the maximum allowed hours of operation for 8760 hours, as appropriate.

ACTUAL CONTAMINANT EMISSIONS $[\text{Actual pounds of raw material processed in lbs.}] \times [\text{Emission factor in lbs. of contaminant per pound of raw material processed}] \times 1 \text{ ton} / 2000 \text{ lbs.} = \text{tons of contaminant emissions}$


SECTION C.1.3: FORMULAS AND SAMPLE CALCULATIONS FOR FUEL UTILIZATION FACILITIES

This section is divided into three parts:

- Section C.1.3.1: Formulas for Estimating Emissions from Fuel Utilization Facilities using Emission Factors
- Section C.1.3.2: Emission Factors for Fuel Utilization Facilities
- Section C.1.3.3: Example Calculations for a Boiler

Section C.1.3.1: Formulas for Estimating Emissions from Fuel Utilization Facilities using Emission Factors

Table C.1.3-1 presents formulas using emissions factors to estimate potential emissions from fuel utilization facilities. There is separate formula for each criteria pollutant, and for when enforceable operating limits exist, and for when they do not exist.

 **CAUTION ON USING EMISSION FACTORS:** There are various sources for emission factors. When calculating potential emissions you **MUST** use the emission factors developed through stack testing data or if your facility has never been required to conduct a stack test for the emission unit, the emissions limit established as part of your permit or plan approval, emission limits your facility is subject to pursuant to regulations or, if none of the former conditions exist, emission factors from EPA's AP-42 Emission factors.

- EPA AP-42 Emission Factors are listed in Table C.1.3.2
- Emission limits (emission factors) for Fuel utilization facilities with an energy input greater than 3 Million BTU per hour are listed in Table C.1.3.3 (Use the emission factors in Table C.1.3.5 unless you hold a permit or plan approval with a more stringent limit.)
- Emission limits (emission factors) for Fuel utilization facilities in the City of Worcester are listed in Table C.1.3-4.
- Emission limits (emission factors) for Boilers subject to NOX RACT are listed in Table C.1.3-5.

TABLE C.1.3-1

Formulas for calculating Potential and Actual Emissions from Fuel Utilization Facilities using Emission Factors



Air Contaminant	Formula for Estimating Emissions
<p>PARTICULATE MATTER, PM10 and PM2.5</p> <p>POTENTIAL EMISSIONS</p> <p>For facilities WITHOUT an operating restriction:</p> $[\text{EMISSION FACTOR (in lbs. of TSP, PM10 or PM2.5 per 1000 gallons of fuel)}] \times [\% \text{ S in the fuel}^*] \times [\text{Maximum rated gallons of fuel per hour} / 1000 \text{ gallons of fuel}] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of TSP, PM10 or PM2.5 per year}$ <p>For facilities WITH an operating restriction:</p> $[\text{EMISSION FACTOR (in lbs. of TSP, PM10 or PM2.5 per 1000 gallons of fuel)}] \times [\% \text{ S in the fuel}^*] \times [\text{Maximum allowed gallons of fuel per hour} / 1000 \text{ gallons of fuel}] \times [\text{maximum allowed hours of operation per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of TSP, PM10 or PM2.5 per year}$ <p> NOTE: Particulate emissions can also be calculated from the lbs. of particulate generated per million BTU (MBTU) heat release potential of the fuel. The example calculations in Table C.1.3-8 below use this method. The formula is:</p> $[\text{EMISSION FACTOR (in lbs. of TSP per MMBTU)}] \times [(\text{BTU's per gallon of fuel}^{**}) / 1,000,000 \text{ BTU's}] \times [\text{maximum rated or maximum allowable gallons of fuel per hour}] \times [\text{maximum allowed or 8760 hours of operation per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}]$ <p>*% S in fuel can be found in Table C.1.3-6 **BTU's per gallon of fuel can be found in Table C.1.3-7</p> <p>ACTUAL EMISSIONS</p> $[\text{EMISSION FACTOR (in lbs. of contaminant per 1000 gallons of fuel)}] \times [\% \text{ S in the fuel}^*] \times [\text{gallons of fuel used during the year} / 1000] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of TSP or PM10 per year}$ <p>or for TSP ONLY</p> $[\text{EMISSION FACTOR (in lbs. of Particulate per MMBTU)}] \times [(\text{BTU's per gallon of fuel}^{**}) / 1,000,000 \text{ BTU's}] \times [\text{gallons of fuel used during the year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of TSP per year}$	
<p>SOX POTENTIAL EMISSIONS</p>	<p>FOR FACILITIES WITHOUT AN OPERATING RESTRICTION</p> $[\text{EMISSION FACTOR for 1000 gallons of fuel}] \times [\% \text{ S in the fuel}^*] \times [\text{Maximum rated gallons of fuel per hour} / 1000] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of SO}_x \text{ per year}$ <p>For facilities WITH an operating restriction:</p> $[\text{EMISSION FACTOR (in lbs. per 1000 gallons of fuel)}] \times [\% \text{ S in the fuel}^*] \times [\text{Maximum allowed gallons of fuel per hour} / 1000] \times [\text{maximum allowed hours of operation per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of SO}_x \text{ per year}$ <p> NOTE: SO_x emissions can also be calculated from the lbs. of sulfur in the fuel per million BTU (MBTU) heat release potential of the fuel. The example calculations in Table C.1.3-8 below use this method. The formula is:</p> $[\text{Lbs. S in the fuel per MMBtu}] \times [2 \text{ (the lbs. of SO}_x \text{ emitted per lb. of Sulfur in the fuel)}] \times [(\text{BTU's per gallon of fuel}) / 1,000,000 \text{ BTU's}] \times [\text{maximum rated or maximum allowable gallons of fuel per hour}] \times [\text{maximum allowed or 8760 hours of operation per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}]$ <p>*% S in fuel can be found in Table C.1.3-6 **BTU's per gallon of fuel can be found in Table C.1.3-7</p>

TABLE C.1.3-1

Formulas for calculating Potential and Actual Emissions from Fuel Utilization Facilities using Emission Factors

Air Contaminant	Formula for Estimating Emissions
ACTUAL EMISSIONS	$\text{EMISSION FACTOR (in lbs. per 1000 gallons of fuel)} \times [\% \text{ S in the fuel}] \times [\text{gallons of fuel used during the year} / 1000] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of SOX per year}$ <p>Or</p> $[\text{EMISSION FACTOR (in lbs. S in the fuel per MMBTU)}] \times [2 \text{ (the lbs. of SO}_x \text{ emitted per lb. of Sulfur in the fuel)}] \times [(\text{BTU's per gallon of fuel}) / 1,000,000 \text{ BTU's}] \times [\text{gallons of fuel used during the year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of SO}_x \text{ per year}$
NO _x , VOC, CO, PB, NH ₃ POTENTIAL EMISSIONS	<p>For facilities WITHOUT an operating restriction:</p> $[\text{EMISSION FACTOR}] \times [\text{Maximum rated gallons of fuel per hour} / 1000] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of Contaminant per year}$ <p>For facilities WITH an operating restriction:</p> $[\text{EMISSION FACTOR}] \times [\text{Maximum allowed gallons of fuel per hour} / 1000] \times [\text{maximum allowed hours of operation per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of Contaminant per year}$
ACTUAL EMISSIONS	$[\text{EMISSION FACTOR}] \times [\text{gallons of fuel used during the year} / 1000] \times [1 \text{ ton} / 2000 \text{ lbs.}] = \text{Tons of Contaminant per year}$

Section C.1.3.2: Emission Factors for Fuel Utilization Facilities

Table C.1.3.-2

EPA AP-42 Emission Factors for Fuel Utilization Facilities




FOR USE ONLY IF The facility is NOT subject to a more restrictive emission limit or does NOT have stack testing information available

FUEL TYPE / FACILITY SIZE	LBS OF EMISSIONS PER 1000 GALLONS OF FUEL						
	PM	PM 10	SO _x	NO _x	VOC	CO	Lead (Pb)
Any Oil Facility > 100 MMBTU per hour	12 lbs. (per 1000 gallons of fuel)	7.18 lbs. (per 1000 gallons of fuel)	158.6 lbs. (per 1000 gallons of fuel)	67.0 lbs. (per 1000 gallons of fuel)	1.13 lbs. (per 1000 gallons of fuel)	5.0 lbs. (per 1000 gallons of fuel)	0.0042 lbs. (per 1000 gallons of fuel)
Residual Oil # 6 Facility 0.5 –100 MMBTU per hour	12 lbs. (per 1000 gallons of fuel)	7.18 lbs. (per 1000 gallons of fuel)	158.6 lbs. (per 1000 gallons of fuel)	55.0 lbs. (per 1000 gallons of fuel)	1.13 lbs. (per 1000 gallons of fuel)	5.0 lbs. (per 1000 gallons of fuel)	0.0042 lbs. (per 1000 gallons of fuel)
Residual Oil # 4 Facility .5 -100 MMBTU per hour	7.0 lbs. (per 1000 gallons of fuel)	5.19 lbs. (per 1000 gallons of fuel)	150.0 lbs. (per 1000 gallons of fuel)	47.0 lbs. (per 1000 gallons of fuel)	0.76 lbs. (per 1000 gallons of fuel)	5.0 lbs. (per 1000 gallons of fuel)	0.0004 lbs. (per 1000 gallons of fuel)
Distillate Oil #1 &2 Facility .5 -100 MMBTU per hour	2.0 lbs. (per 1000 gallons of fuel)	1.08 lbs. (per 1000 gallons of fuel)	143.6 lbs. (per 1000 gallons of fuel)	20.0 lbs. (per 1000 gallons of fuel)	0.34 lbs. (per 1000 gallons of fuel)	5.0 lbs. (per 1000 gallons of fuel)	0.0004 lbs. (per 1000 gallons of fuel)
Facility <.05 MMBTU per hour	2.0 lbs. (per 1000 gallons of fuel)	1.08 lbs. (per 1000 gallons of fuel)	143.6 lbs. (per 1000 gallons of fuel)	18.0 lbs. (per 1000 gallons of fuel)	0.34 lbs. (per 1000 gallons of fuel)	5.0 lbs. (per 1000 gallons of fuel)	0.0004 lbs. (per 1000 gallons of fuel)
Natural Gas:							
Facilities >100 MMBTU per hour	3.0 lbs. (per million cubic feet of fuel (MMCF))	3.0 lbs. (per million cubic feet of fuel (MMCF))	0.6 lbs. (per million cubic feet of fuel (MMCF))	280.0 lbs. (per million cubic feet of fuel (MMCF))	2.8 lbs. (per million cubic feet of fuel (MMCF))	35.0 lbs. (per million cubic feet of fuel (MMCF))	Insignificant
Facilities 10 -100 MMBTU per hour	3.0 lbs. (per million cubic feet of fuel (MMCF))	3.0 lbs. (per million cubic feet of fuel (MMCF))	0.6 lbs. (per million cubic feet of fuel (MMCF))	100.0 lbs. (per million cubic feet of fuel (MMCF))	1.4 lbs. ((per million cubic feet of fuel (MMCF))	40.0 lbs. (per million cubic feet of fuel (MMCF))	Insignificant
Facilities < 10 MMBTU per hour	3.0 lbs. (per million cubic feet of fuel (MMCF))	3.0 lbs. (per million cubic feet of fuel (MMCF))	0.6 lbs. (per million cubic feet of fuel (MMCF))	100 lbs. (per million cubic feet of fuel (MMCF))	1.4 lbs. (per million cubic feet of fuel (MMCF))	20.0 lbs. (per million cubic feet of fuel (MMCF))	Insignificant

Note: General emission factors for NH₃ and PM_{2.5} have not been adopted by EPA, see attached tables for specific SCC emission factors.

TABLE C.1.3-3

More Restrictive Particulate Emission Rates For Fossil Fuel Utilization FACILITIES with an Total Energy Input Capacity of 3 or greater Million BTU (MBTU) per Hour:

Facility Size	Emission Limitation in lbs. of Particulate per million BTU (MMBTU)		
	 NOTE: Use the emission limit as the emission factor for Particulate (TSP) Emissions		
	New Facilities (Facilities installed after June 1, 1972)	Existing Facilities (Not located in Critical Areas of Concern)	Existing Facilities (Located in Critical areas of concern. Municipalities in Critical Areas of Concern are listed in Appendix A: Definitions)
3 – 250 MMBTU per hour	0.10 (lb. per MMBTU)	0.15 (lb. per MMBTU)	0.12 (lb. per MMBTU)
250 MMBTU per hour	0.05* (lb. per MMBTU)	0.15 (lb. per MMBTU)	0.12 (lb. per MMBTU)

* An emission rate of 0.10 lbs. (particulate) per MMBTU will be allowed if a facility is using equipment designed to control or reduce sulfur dioxide at the same time or in the same process so that the provisions of 310 CMR 7.05 are satisfied.

TABLE C.1.3-4

Particulate (TSP) Emission Limit for Fuel Utilization Facilities in the City of Worcester

Facility Size in Million BTU (MBTU) heat release potential per hour input	Emission Limitation in Pounds of Particulates (PM) per Million BTU (MBTU) Heat Release Potential of the Fuel (EMISSION FACTOR for Particulate Emissions)		
	Fuel Type	New Facility (Facilities installed after June 1, 1972)	Existing
3 – 250 MMBTU	Solid fuel Residual fuel Distillate oil Gas	0.10 (lb. per MMBTU) 0.10 (lb. per MMBTU) 0.10 (lb. per MMBTU) 0.10 (lb. per MMBTU)	0.12 (lb. per MMBTU) 0.12 (lb. per MMBTU) 0.10 (lb. per MMBTU) 0.10 (lb. per MMBTU)
> 250 MMBTU	Solid fuel Residual fuel Distillate oil Gas Wood	0.05 (lb. per MMBTU) 0.05 (lb. per MMBTU) 0.05 (lb. per MMBTU) 0.05 (lb. per MMBTU) 0.10 (lb. Per MMBTU)	0.12 (lb. per MMBTU) 0.12 (lb. per MMBTU) 0.10 (lb. per MMBTU) 0.10 (lb. per MMBTU) 0.10 (lb. per MMBTU)

TABLE C.1.3-5 EMISSION FACTORS for Facilities Subject to RACT for NOX



CAUTION: THESE FACTORS **DO NOT APPLY** TO BOILERS SUBJECT TO RACT IN THE FOLLOWING SITUATIONS:

1. IF the boiler complies with NO_x RACT by fuel switching pursuant to 310 CMR 7.19(2)(f) you must use the formula in 310 CMR 7.19 (2) (f) to calculate your emission limitation
2. IF you have an alternative NO_x RACT for a boiler pursuant to 310 CMR 7.19(4)(c) the emission factor will be in the Emission Control Plan for that boiler
3. IF your facility burns more than one fuel type in the boiler simultaneously, or in the same hour, or if a 24 hour averaging time is use, in the same day, the emission limit for that boiler is calculated using the formula in 310 CMR 7.19(14)

TABLE C.1.3-5 Emission Limits for Certain Facilities Subject to NO_x RACT		
Boiler size (input capacity)	Boiler type and Fuel	NO _x Emission limit/Emission factor: (Pounds of NO _x PER Million BTU (MBTU) of fuel.
SOLID FUEL FIRED BOILERS		
>100 MMBTU per hour	Dry bottom	
	-Tangential fired: Coal	0.38 lbs. per MMBTU
	-Face fired: Coal	0.45 lbs. per MMBTU
	Stoker Fired:" Other solid fuel"	0.33 lbs per MMBTU
OIL AND GAS FIRED BOILERS		
> 250 MMBTU per hour	Tangential Fired: oil	0.25 lbs. per MMBTU
	Tangential Fired: gas	0.20 lbs. per MMBTU
	Face Fired: oil or gas	0.28 lbs. per MMBTU
100 – 250 MMBTU per hour	Heat release < or = 70,000 BTU per hour per ft ³ : Oil or oil and gas	0.30 lbs. per MMBTU
	Heat release > 70,000 BTU per hour per ft ³ : Oil or oil and gas	0.40 lbs. per MMBTU
	Gas Only	0.20 lbs. per MMBT U
50 – 100 MMBTU per hour	Tangential or Face Fired: Solid fuel	0.43 lbs. per MMBTU
	Tangential or Face Fired: Distillate oil or distillate oil and gas	0.12 lbs. per MMBTU
	Tangential or Face Fired: Gas only	0.10 lbs. per MMBTU
	Tangential or Face Fired: Residual oil or residual oil and gas	0.30 lbs. per MMBTU

TABLE C.1.3-6**Sulfur In Fuel (for the purpose of 310 CMR 7.05)**

(a) Oil	2% sulfur content	= 1.10 lbs. of sulfur per million BTU (MBTU) heat release potential
	1% sulfur content	= 0.55 lbs. of sulfur per MMBTU heat release potential
	0.5% sulfur content	= 0.28 lbs. of sulfur per MMBTU heat release potential.
	0.3% sulfur content	= 0.17 lbs. of sulfur per MMBTU heat release potential
(b) Coal	1.43% sulfur content	= 1.10 lbs. of sulfur per MMBTU heat release potential (assuming 13,000 BTU per lb.)
	0.72% sulfur content	= 0.55 lbs. of sulfur per MMBTU heat release potential (assuming 13,000 BTU. per lb.)
	0.36% sulfur content	= 0.28 lbs. of sulfur per MMBTU heat release potential (assuming 13,000 BTU. per lbs.)

TABLE C.1.3-7**Fossil Fuel Heat Values**

FUEL TYPE	SULFUR CONTENT % by weight	(S) lbs. per million (MM) BTU	HEAT VALUE BTU per gallon
NO. 6	1%	0.55	147,000
	2.2%	1.21	150,000
	0.5%	0.28	142,000
NO. 4 or 5	0.5%	0.28	142,000
NO. 5	1%	0.55	147,000
NO. 1 or 2	0.3%	.17	140,000

TABLE C.1.3-8
Example Calculations For A BOILER

EMISSION UNIT DESCRIPTION:	<ul style="list-style-type: none"> ✓ No MassDEP permits, ✓ Over 3 MMBTU per hour heat input capacity ✓ Installed prior to 1972 therefore considered an existing facility <ul style="list-style-type: none"> • Particulate limits of 0.15 lb. per MMBTU (from Table C.1.3-3). • 1% Sulfur in fuel • Residual Oil # 6 fuel (specified in the regulations) ✓ No other federally enforceable restrictions apply ✓ No limits on the hours of operation. ✓ 2 boilers each with a maximum capacity of 23 gallons per hour ✓ Maximum possible fuel use: (2 boilers x 23 gallons per hour x 8760 hours per year = 402,960 gallon per year ✓ Residual Oil # 6 therefore 147,000 BTU per gallon heat value (from Table C.1.3-7) ✓ 1% sulfur content therefore 0.55 lbs. of sulfur per million BTU heat release potential (from Table C.1.3-6). ✓ Actual fuel use = 123,456 gallons
POTENTIAL PARTICULATE EMISSIONS	$[0.15 \text{ lbs. particulate per MMBtu}] \times [23 \text{ gallons of fuel per hour} \times 2 \text{ boilers} \times 8760 \text{ hours per year of fuel}] \times [147,000 \text{ BTU per gallon of fuel} / 1,000,000 \text{ BTU}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 4.4 \text{ tons particulates per year}$
POTENTIAL PM10 EMISSIONS	$[7.18 \text{ lbs. PM10 per 1000 gallons of fuel}] \times [1 \text{ (percent S in fuel)}] \times [23 \text{ gallons of fuel per hour} \times 2 \text{ boilers} \times 8760 \text{ hours per year of fuel}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 1.57 \text{ tons PM10 per year}$
POTENTIAL SO _x EMISSIONS	$[0.55 \text{ lbs. S in fuel per MMBTU}] \times [2 \text{ lbs SO}_2 \text{ per lb s}] \times [23 \text{ gallons of fuel per hour} \times 2 \text{ boilers}] \times [8760 \text{ hours per year}] \times [147,000 \text{ BTU per gallon of fuel} / \text{gal}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 32.6 \text{ Tons SO}_x \text{ per year}$
POTENTIAL NO _x EMISSIONS	$[55.0 \text{ lbs. NO}_x \text{ per 1000 gallons of fuel}] \times [23 \text{ gallons of fuel per hour} \times 2 \text{ boilers} / 1000 \text{ gallons of fuel}] \times [8760 \text{ hour per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 11.08 \text{ tons NO}_x \text{ per year}$
POTENTIAL VOC EMISSIONS	$[1.13 \text{ lbs. VOC per 1000 gallons of fuel}] \times [23 \text{ gallons of fuel per hour} \times 2 \text{ boilers} / 1000 \text{ gallons of fuel}] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 0.23 \text{ tons of VOC per year}$
POTENTIAL CO EMISSIONS	$[5.0 \text{ lbs. CO per 1000 gallons of fuel}] \times [23 \text{ gallons of fuel per hour} \times 2 \text{ boilers} / 1000 \text{ gallons of fuel}] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 1.01 \text{ tons of CO per year}$
POTENTIAL LEAD EMISSIONS	$[0.0042 \text{ lbs. Lead per 1000 gallons of fuel}] \times [23 \text{ gallons of fuel per hour} \times 2 \text{ boilers} / 1000 \text{ gallons of fuel}] \times [8760 \text{ hours per year}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 0.000846 \text{ tons of Lead per year}$
ACTUAL EMISSIONS	To utilize the above calculation in determining ACTUAL emissions, substitute "ACTUAL GALLONS BURNED per year / 1000" for "[gallons per hour x # of boilers / 1000] x [8760 hours per year]"
ACTUAL EMISSIONS PARTICULATE	$[0.15 \text{ lbs. particulate per MMBtu}] \times [123,456 \text{ gallons of fuel per year}] \times [147,000 \text{ BTU per gallon} / 1,000,000 \text{ BTU}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 1.4 \text{ tons particulates per year}$

TABLE C.1.3-8
Example Calculations For A BOILER

EMISSION UNIT DESCRIPTION:	<ul style="list-style-type: none"> ✓ No MassDEP permits, ✓ Over 3 MMBTU per hour heat input capacity ✓ Installed prior to 1972 therefore considered an existing facility <ul style="list-style-type: none"> • Particulate limits of 0.15 lb. per MMBTU (from Table C.1.3-3). • 1% Sulfur in fuel • Residual Oil # 6 fuel (specified in the regulations) ✓ No other federally enforceable restrictions apply ✓ No limits on the hours of operation. ✓ 2 boilers each with a maximum capacity of 23 gallons per hour ✓ Maximum possible fuel use: (2 boilers x 23 gallons per hour x 8760 hours per year = 402,960 gallon per year ✓ Residual Oil # 6 therefore 147,000 BTU per gallon heat value (from Table C.1.3-7) ✓ 1% sulfur content therefore 0.55 lbs. of sulfur per million BTU heat release potential (from Table C.1.3-6). ✓ Actual fuel use = 123,456 gallons
ACTUAL EMISSIONS PM10	$[0.8 \text{ lbs. PM}_{10} \text{ per } 1000 \text{ gallons of fuel}] \times [1 (\%S \text{ in the fuel})] \times (123,456 \text{ gallons of fuel used} / 1000 \text{ gallons of fuel}) \times (1 \text{ ton} / 2000 \text{ lbs.}) = 0.5 \text{ tons PM}_{10} \text{ per year}$
Actual Emissions PM2.5	$[4.67 \text{ lbs PM}_{2.5} \text{ per } 1000 \text{ gallons of fuel}] \times [1.12 (1\%S \text{ in the fuel}) + .37] \times (123,456 \text{ gallons of fuel used} / 1000 \text{ gallons of fuel}) \times (1 \text{ ton} / 2000 \text{ lbs.}) = 0.43 \text{ tons PM}_{2.5} \text{ per year}$
ACTUAL EMISSIONS SO _x	$[0.55 \text{ lbs. S per MMBTU}] \times [2 (\text{lbs. of SO}_{x \text{ per lb. of S in fuel}})] \times [147,000 \text{ BTU per gallon of fuel} / 1,000,000 \text{ BTU}] \times [123,456 \text{ gallons of fuel used}] \times [1 \text{ ton} / 2000 \text{ lbs.}] = 10 \text{ tons SO}_x \text{ per year}$
ACTUAL EMISSIONS NO _x	$[55.0 \text{ lbs. NO}_x \text{ per } 1000 \text{ gallons of fuel}] \times (123,456 \text{ gallons of fuel used} / 1000 \text{ gallons of fuel}) \times (1 \text{ ton} / 2000 \text{ lbs.}) = 3.4 \text{ tons NO}_x \text{ per year}$
ACTUAL EMISSIONS VOC	$[1.13 \text{ lbs. VOC per } 1000 \text{ gallons of fuel}] \times (123,456 \text{ gallons of fuel used} / 1000 \text{ gallons of fuel}) \times (1 \text{ ton} / 2000 \text{ lbs.}) = 0.1 \text{ tons of VOC per year}$
ACTUAL EMISSIONS CO	$[5.0 \text{ lbs. CO per } 1000 \text{ gallons of fuel}] \times [123,456 \text{ gallons of fuel used} / 1000 \text{ gallons of fuel}] \times (1 \text{ ton} / 2000 \text{ lbs.}) = 0.3 \text{ tons CO per year}$
ACTUAL EMISSIONS LEAD	$[0.0042 \text{ lbs. LEAD per } 1000 \text{ gallons of fuel}] \times [123,456 \text{ gallons of fuel used} / 1000 \text{ gallons of fuel}] \times (1 \text{ ton} / 2000 \text{ lbs.}) = 0.0003 \text{ tons LEAD per year}$

SECTION C.2: THE WEIGHT OF THE VOC, HOC, or HYC CONTROLLED

The Weight of the VOC, HOC, or HYC Controlled is the amount of the VOC, HOC or HYC that is destroyed in the treatment unit. It equals:

$$\frac{(\text{WEIGHT of the VOC, HOC, or HYC USED}) \times (\text{OVERALL [treatment] EFFICIENCY})}{[\text{Calculations shown below}]}$$

"THE WEIGHT OF THE VOC, HOC, or HYC USED" equals

$$\frac{(\text{POUNDS of HOC, VOC or HYC used in FORMULATION})}{[\text{Calculation A below}]} + \frac{(\text{POUNDS of HOC, VOC, or HYC used in SOLVENT THINNER})}{[\text{Calculation B below}]}$$

CALCULATION A: The POUNDS of HOC, VOC, or HYC used in the formulation is calculated as follows:

- 1) Convert the total annual gallons of the formulation used to pounds:

$$(\text{GALLONS of the formulation USED}) \times (\text{DENSITY of the formulation}) = \text{TOTAL POUNDS of formulation USED}$$

- 2) Determine the pounds of HOC, VOC or HYC used in the formulation:

$$(\text{TOTAL POUNDS of formulation USED}) \times (\text{WEIGHT \% of the HOC, VOC, or HYC in the formulation})^* = \text{TOTAL POUNDS of HOC, VOC, or HYC used in the formulation}$$

CALCULATION B: The amount of the HOC, VOC or HYC from use of solvent thinners is calculated as follows:

- 1) Convert the gallons of solvent thinner used to pounds

$$(\text{GALLONS of the solvent thinner USED}) \times (\text{DENSITY of the solvent thinner}) = \text{POUNDS of solvent thinner used}$$

- 2) Determine the pounds of HOC, VOC, or HYC used in solvent thinner

$$(\text{POUNDS of solvent thinner USED}) \times (\text{WEIGHT \% of the HOC, VOC, or HYC in the solvent thinner})^* = \text{POUNDS of HOC, VOC, or HYC in solvent thinner}$$

*[The weight % will equal 1 if the solvent thinner is a organic compound. The weight % of the HOC, VOC, or HYC can be found on the MSDS if the solvent thinner is a mixture]

Table C1.3-9 PM2.5 Emission Factors

SCC	Process Name	PM2.5 (lbs/Unit)	Unit
<p>A=Ash weight percent of fuel S=Sulfur content</p>			
EXTERNAL COMBUSTION BOILERS			
External Combustion Boilers - Electric Generation			
External Combustion Boilers: Electric Generation - Anthracite Coal			
1-01-001-01	Pulverized Coal	0.6A	Tons Anthracite Burned
External Combustion Boilers: Electric Generation – Bituminous / Subbituminous Coal			
1-01-002-01	Pulverized Coal: Wet Bottom (Bituminous Coal)	1.49A	Tons Bituminous Coal Burned
1-01-002-02	Pulverized Coal: Dry Bottom (Bituminous Coal)	00000.6A	Tons Bituminous Coal Burned
1-01-002-03	Cyclone Furnace (Bituminous Coal)	00000.11A	Tons Bituminous Coal Burned
1-01-002-04	Spreader Stoker (Bituminous Coal)	4.6	Tons Bituminous Coal Burned
1-01-002-05	Traveling Grate (Overfeed) Stoker (Bituminous Coal)	2.2	Tons Bituminous Coal Burned
1-01-002-12	Pulverized Coal: Dry Bottom (Tangential) (Bituminous Coal)	00000.6A	Tons Bituminous Coal Burned
External Combustion Boilers: Electric Generation - Residual Oil			
1-01-004-01	Grade 6 Oil: Normal Firing	4.3(1.12S + 0.37)	1000 Gallons Residual Oil Burned
1-01-004-04	Grade 6 Oil: Tangential Firing	4.3(1.12S + 0.37)	1000 Gallons Residual Oil Burned
1-01-004-05	Grade 5 Oil: Normal Firing	4.3(1.2)	1000 Gallons Residual Oil Burned
1-01-004-06	Grade 5 Oil: Tangential Firing	4.3(1.2)	1000 Gallons Residual Oil Burned
External Combustion Boilers: Electric Generation - Distillate Oil			
1-01-005-04	Grade 4 Oil: Normal Firing	4.3(0.84)	1000 Gallons Residual Oil Burned
1-01-005-05	Grade 4 Oil: Tangential Firing	3.6	1000 Gallons Residual Oil Burned
External Combustion Boilers: Electric Generation - Wood/Bark Waste			
1-01-009-01	Bark-fired Boiler	10	Tons Wood Waste Burned

1-01-009-02 Wood/Bark Fired Boiler	5.47	Tons Wood/Bark Burned
External Combustion Boilers - Industrial		
External Combustion Boilers: Industrial - Anthracite Coal		
1-02-001-01 Pulverized Coal	0.6A	Tons Anthracite Burned
External Combustion Boilers: Industrial - Bituminous/Subbituminous Coal		
1-02-002-01 Pulverized Coal: Wet Bottom	1.48A	Tons Bituminous Coal Burned
External Combustion Boilers: Industrial - Bituminous/Subbituminous Coal		
1-02-002-02 Pulverized Coal: Dry Bottom	0.6A	Tons Bituminous Coal Burned
1-02-002-03 Cyclone Furnace	0.11A	Tons Bituminous Coal Burned
1-02-002-04 Spreader Stoker	4.6	Tons Bituminous Coal Burned
1-02-002-05 Overfeed Stoker	2.2	Tons Bituminous Coal Burned
1-02-002-06 Underfeed Stoker	3.8	Tons Bituminous Coal Burned
1-02-002-12 Pulverized Coal: Dry Bottom (Tangential)	0.6A	Tons Bituminous Coal Burned
External Combustion Boilers: Industrial - Residual Oil		
1-02-004-01 Grade 6 Oil	4.67(1.12(S)+0.37)	1000 Gallons Residual Oil Burned
1-02-004-02 10-100 Million Btu/hr	4.67(1.12(S)+0.37)	1000 Gallons Residual Oil Burned
1-02-004-03 < 10 Million Btu/hr	4.67(1.12(S)+0.37)	1000 Gallons Residual Oil Burned
1-02-004-04 Grade 5 Oil	5.6	1000 Gallons Residual Oil Burned
External Combustion Boilers: Industrial - Distillate Oil		
1-02-005-01 Grades 1 and 2 Oil	0.25	1000 Gallons Distillate Oil Burned
1-02-005-02 10-100 Million Btu/hr	0.25	1000 Gallons Distillate Oil Burned
1-02-005-03 < 10 Million Btu/hr	0.25	1000 Gallons Distillate Oil Burned
1-02-005-04 Grade 4 Oil	3.9	1000 Gallons Distillate Oil Burned
External Combustion Boilers: Industrial - Wood/Bark Waste		
1-02-009-01 Bark-fired Boiler (> 50,000 Lb Steam)	10	Tons Wood Waste Burned
1-02-009-02 Wood/Bark-fired Boiler (> 50,000 Lb Steam)	5.47	Tons Wood/Bark Burned
1-02-009-04 Bark-fired Boiler (< 50,000 Lb Steam)	10	Tons Wood Waste Burned

1-02-009-05 Wood/Bark-fired Boiler (< 50,000 Lb Steam)	5.47	Tons Wood/Bark Burned
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External Combustion Boilers - Commercial/Institutional

External Combustion Boilers: Commercial/Institutional - Anthracite Coal

1-03-001-01 Pulverized Coal	0.6A	Tons Anthracite Burned
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External Combustion Boilers: Commercial/Institutional - Bituminous/Subbituminous Coal

1-03-002-03 Cyclone Furnace (Bituminous Coal)	0.11A	Tons Bituminous Coal Burned
1-03-002-05 Pulverized Coal: Wet Bottom (Bituminous Coal)	1.48A	Tons Bituminous Coal Burned
1-03-002-06 Pulverized Coal: Dry Bottom (Bituminous Coal)	0.6A	Tons Bituminous Coal Burned

External Combustion Boilers: Commercial/Institutional - Bituminous/Subbituminous Coal -

1-03-002-07 Overfeed Stoker (Bituminous Coal)	2.2	Tons Bituminous Coal Burned
1-03-002-08 Underfeed Stoker (Bituminous Coal)	3.8	Tons Bituminous Coal Burned
1-03-002-09 Spreader Stoker (Bituminous Coal)	4.6	Tons Bituminous Coal Burned
1-03-002-16 Pulverized Coal: Dry Bottom (Tangential) (Bituminous Coal)	0.6A	Tons Bituminous Coal Burned

External Combustion Boilers: Commercial/Institutional - Residual Oil

1-03-004-01 Grade 6 Oil	1.92(1.12(S))+0.37	1000 Gallons Residual Oil Burned
1-03-004-02 10-100 Million Btu/hr	1.92(1.12(S))+0.37	1000 Gallons Residual Oil Burned
1-03-004-03 < 10 Million Btu/hr	1.92(1.12(S))+0.37	1000 Gallons Residual Oil Burned
1-03-004-04 Grade 5 Oil	2.3	1000 Gallons Residual Oil Burned

External Combustion Boilers: Commercial/Institutional - Distillate Oil

1-03-005-01 Grades 1 and 2 Oil	0.83	1000 Gallons Distillate Oil Burned
1-03-005-02 10-100 Million Btu/hr	0.83	1000 Gallons Distillate Oil Burned
1-03-005-03 < 10 Million Btu/hr	0.83	1000 Gallons Distillate Oil Burned
1-03-005-04 Grade 4 Oil	0.83	1000 Gallons Distillate Oil Burned

External Combustion Boilers: Commercial/Institutional - Wood/Bark Waste

1-03-009-01 Bark-fired Boiler	10	Tons Wood Waste Burned
1-03-009-02 Wood/Bark-fired Boiler	5.47	Tons Wood/Bark Burned

INTERNAL COMBUSTION ENGINES

Air Quality Source Registration Package Instructions

APPENDIX C: EXAMPLE CALCULATIONS

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Internal Combustion Engines - Industrial

Internal Combustion Engines: Industrial - Distillate Oil (Diesel)

2-02-001-02 Reciprocating	42.5	1000 Gallons Distillate Oil (Diesel) Burned
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Internal Combustion Engines: Industrial - Natural Gas

2-02-002-52 2-cycle Lean Burn	0.0384	Million Btus Fuel Input
2-02-002-53 4-cycle Rich Burn	0.0095	Million Btus Fuel Input
2-02-002-54 4-cycle Lean Burn	0.0000771	Million Btus Fuel Input

Internal Combustion Engines: Industrial - Large Bore Engine

2-02-004-01 Diesel	6.5	1000 Gallons Diesel Burned
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Internal Combustion Engines - Commercial/Institutional

Internal Combustion Engines: Commercial/Institutional - Distillate Oil (Diesel)

2-03-001-01 Reciprocating	42.5	1000 Gallons Distillate Oil (Diesel) Burned
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Internal Combustion Engines: Commercial/Institutional - Gasoline

2-03-003-01 Reciprocating	12.6	1000 Gallons Gasoline Burned
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INDUSTRIAL PROCESSES

Industrial Processes - Chemical Manufacturing

Industrial Processes: Chemical Manufacturing - Ammonium Nitrate Production

3-01-027-07 Rotary Drum Granulator	0.27	Tons Ammonium Nitrate Produced
3-01-027-22 Prilling Tower: Low Density	0.52	Tons Ammonium Nitrate Produced
3-01-027-24 Prilling Cooler: Low Density	0.015	Tons Ammonium Nitrate Produced
3-01-027-25 Prilling Dryer: Low Density	0.046	Tons Ammonium Nitrate Produced
3-01-027-29 Rotary Drum Granulator Coolers	0.0097	Tons Ammonium Nitrate Produced

Industrial Processes: Chemical Manufacturing - Urea Production

3-01-040-08 Non-fluidized Bed Prilling (Agricultural Grade)	3	Tons Urea Produced
3-01-040-09 Non-fluidized Bed Prilling (Feed Grade)	1.8	Tons Urea Produced
3-01-040-10 Fluidized Bed Prilling (Agricultural Grade)	2.7	Tons Urea Produced
3-01-040-11 Fluidized Bed Prilling (Feed Grade)	0.5	Tons Urea Produced
3-01-040-12 Rotary Drum Cooler	0.31	Tons Urea Produced

Industrial Processes - Food and Agriculture

Industrial Processes: Food and Agriculture - Grain Millings

3-02-007-09 Barley Malting: Gas-fired Malt Kiln	0.075	Tons Grain Processed
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Industrial Processes: Food and Agriculture - Beer Production

3-02-009-30 Brewers Grain Dryer: Natural Gas-fired	0.091	Tons Dried Grain Produced
3-02-009-32 Brewers Grain Dryer: Steam-heated	0.091	Tons Dried Grain Produced

Industrial Processes: Food and Agriculture - Meat Smokehouses

3-02-013-02 Batch Smokehouses: Smoking Cycle	23	Tons Sawdust Used
3-02-013-04 Continuous Smokehouse: Smoke Zone	66	Tons Sawdust Used

Industrial Processes - Primary Metal Production

Industrial Processes: Primary Metal Production - Aluminum Ore (Electro-reduction)

3-03-001-02 Horizontal Stud Soderberg Cell	39.2	Tons Molten Aluminum Produced
3-03-001-08 Prebake: Fugitive Emissions	1.4	Tons Molten Aluminum Produced
3-03-001-09 H.S.S.: Fugitive Emissions	1.7	Tons Molten Aluminum Produced

Industrial Processes: Primary Metal Production - By-product Coke Manufacturing

3-03-003-03 Oven Pushing	0.19	Tons Coal Charged
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Industrial Processes - Primary Metal Production

Industrial Processes: Primary Metal Production - By-product Coke Manufacturing

3-03-003-13 Coal Preheater	2.1	Tons Coal Charged
3-03-003-17 Combustion Stack: Coke Oven Gas (COG)	0.44	Tons Coal Charged

Industrial Processes: Primary Metal Production - Ferroalloy, Open Furnace

3-03-006-01 50% FeSi: Electric Smelting Furnace	40	Tons Material Produced
3-03-006-04 Silicon Metal: Electric Smelting Furnace	654	Tons Material Produced

3-03-006-05 Silicomanganese: Electric Smelting Furnace	125	Tons Material Produced
3-03-006-06 80% Ferromanganese	17	Tons Material Produced
3-03-006-07 80% Ferrochromium	99	Tons Material Produced

Industrial Processes: Primary Metal Production - Iron Production

3-03-008-13 Windbox	0.56	Tons Material Produced
3-03-008-25 Cast House	0.14	Tons Material Produced

Industrial Processes: Primary Metal Production - Steel Manufacturing

03-009-01 Open Hearth Furnace: Stack	12.7	Tons Material Produced
3-03-009-13 Basic Oxygen Furnace: Open Hood-Stack	0.0044	Tons Material Produced
3-03-009-16 Charging: BOF	0.13	Tons Material Produced
3-03-009-17 Tapping: BOF	0.34	Tons Material Produced

Industrial Processes - Secondary Metal Production

Industrial Processes: Secondary Metal Production - Aluminum

3-04-001-03 Smelting Furnace/Reverberatory	2.16	Tons Metal Produced
3-04-001-04 Fluxing: Chlorination	199	Tons Metal Produced

Industrial Processes: Secondary Metal Production - Grey Iron Foundries

3-04-003-01 Cupola	11.6	Tons Metal Produced
3-04-003-18 Pouring, Cooling	1	Tons Metal Produced
3-04-003-31 Casting Shakeout	1.34	Tons Metal Produced

Industrial Processes - Mineral Products

Industrial Processes: Mineral Products - Brick Manufacture

3-05-003-10 Curing and Firing: Sawdust Fired Tunnel Kilns	0.16	Tons Brick Produced
3-05-003-13 Curing and Firing: Coal-fired Tunnel Kilns	0.28	Tons Brick Produced

Industrial Processes - Mineral Products

Industrial Processes: Mineral Products - Castable Refractory

3-05-005-01 Fire Clay: Rotary Dryer	1.6	Tons Feed Material Fed
3-05-005-06 Fire Clay: Rotary Calciner	8.3	Tons Feed Material Fed

Industrial Processes: Mineral Products - Cement Manufacturing (Wet Process)

3-05-007-06 Kilns A228	9.1	Tons Clinker Produced
Industrial Processes: Mineral Products - Coal Mining, Cleaning, and Material Handling		
3-05-010-01 Fluidized Bed	3.8	Tons Feed Material Fed
Industrial Processes: Mineral Products - Glass Manufacture		
3-05-014-02 Container Glass: Melting Furnace	1.3	Tons Glass Produced
3-05-014-03 Flat Glass: Melting Furnace	1.8	Tons Glass Produced
3-05-014-04 Pressed and Blown Glass: Melting Furnace	16	Tons Glass Produced
Industrial Processes: Mineral Products - Lime Manufacture		
3-05-016-18 Calcining: Coal-fired Rotary Kiln	4.9	Tons Lime Manufactured
3-05-016-20 Calcining: Coal- and Gas-fired Rotary Kiln	1.1	Tons Lime Manufactured
Industrial Processes: Mineral Products - Clay processing: Kaolin		
3-05-041-41 Calcining, multiple hearth furnace	7.8	Tons Clay Produced
3-05-041-42 Calcining, flash calciner	280	Tons Clay Produced
Industrial Processes: Mineral Products - Clay processing: Fire clay		
3-05-043-30 Drying, rotary dryer	1.6	Tons Clay Produced
3-05-043-40 Calcining, rotary calciner	8.3	Tons Clay Produced
Industrial Processes: Mineral Products - Clay processing: Bentonite		
3-05-044-30 Drying, rotary dryer	2	Tons Clay Produced
Industrial Processes - Pulp and Paper and Wood Products		
Industrial Processes: Pulp and Paper and Wood Products - Sulfate (Kraft) Pulping		
3-07-001-04 Recovery Furnace/Direct Contact Evaporator	150	Tons Air-Dried Unbleached Pulp Produced
3-07-001-05 Smelt Dissolving Tank	5.1	Tons Air-Dried Unbleached Pulp Produced
3-07-001-06 Lime Kiln	5.9	Tons Air-Dried Unbleached Pulp Produced
3-07-001-10 Recovery Furnace/Indirect Contact Evaporator	180	Tons Air-Dried Unbleached Pulp Produced

WASTE DISPOSAL

Waste Disposal - Solid Waste Disposal - Government

Waste Disposal: Solid Waste Disposal - Government - Other Incineration

5-01-005-15 Sludge: Multiple Hearth

2.2

Tons Dried Sludge Fed

5-01-005-17 Sludge: Electric Infrared

2

Tons Dried Sludge Fed

Waste Disposal - Solid Waste Disposal - Commercial/Institutional**Waste Disposal: Solid Waste Disposal - Commercial/Institutional - Incineration**

5-02-005-01 Med Waste Controlled Air Incin-aka Starved air, 2-stg, or Modular comb

2.022

Tons Medical Waste Burned

Table C1.3-10 NH3 Emission Factors

SCC	Process Name	NH3 (lbs/Unit)	Unit
EXTERNAL COMBUSTION BOILERS			
External Combustion Boilers - Electric Generation			
External Combustion Boilers: Electric Generation - Anthracite Coal			
1-01-001-01	Pulverized Coal	0.565	1000 Tons Anthracite Burned
1-01-001-02	Traveling Grate	0.565	1000 Tons Anthracite Burned
External Combustion Boilers: Electric Generation - Bituminous/Subbituminous Coal			
1-01-002-01	Pulverized Coal: Wet Bottom (Bituminous Coal)	0.565	1000 Tons Bituminous Coal Burned
1-01-002-02	Pulverized Coal: Dry Bottom (Bituminous Coal)	0.565	1000 Tons Bituminous Coal Burned
1-01-002-03	Cyclone Furnace	0.565	
1-01-002-04	Spreader Stoker	0.565	1000 Tons Bituminous Coal Burned
1-01-002-05	Traveling Grate (Overfeed) Stoker	0.565	1000 Tons Bituminous Coal Burned
1-01-002-11	Wet Bottom (Tangential)	0.565	1000 Tons Bituminous Coal Burned
1-01-002-12	Pulverized Coal: Dry Bottom Tangential	0.565	1000 Tons Bituminous Coal Burned
1-01-002-15	Cell Burner	0.565	1000 Tons Bituminous Coal Burned
1-01-002-17	Atmospheric Fluidized Bed Combustion: Bubbling Bed	0.565	1000 Tons Bituminous Coal Burned
1-01-002-18	Atmospheric Fluidized Bed Combustion: Circulating Bed	0.565	1000 Tons Bituminous Coal Burned
1-01-002-21	Pulverized Coal: Wet Bottom (Subbituminous Coal)	0.565	1000 Tons Subbituminous Coal Burned
1-01-002-22	Pulverized Coal: Dry Bottom (Subbituminous Coal)	0.565	1000 Tons Subbituminous Coal Burned
1-01-002-23	Cyclone Furnace	0.565	1000 Tons Subbituminous Coal Burned
1-01-002-24	Spreader Stoker	0.565	1000 Tons Subbituminous Coal Burned
1-01-002-25	Traveling Grate (Overfeed) Stoker	0.565	1000 Tons Subbituminous Coal Burned
1-01-002-26	Pulverized Coal: Dry Bottom Tangential	0.565	1000 Tons Subbituminous Coal Burned
1-01-002-35	Cell Burner	0.565	1000 Tons Subbituminous Coal Burned
1-01-002-38	Atmospheric Fluidized Bed Combustion: Circulating Bed	0.565	1000 Tons Subbituminous Coal Burned

External Combustion Boilers: Electric Generation - Residual Oil

1-01-004-01	Grade 6 Oil: Normal Firing	0.8	Gallons Residual Oil Burned
1-01-004-04	Grade 6 Oil: Tangential Firing	0.8	Gallons Residual Oil Burned
1-01-004-05	Grade 5 Oil: Normal Firing	0.8	Gallons Residual Oil Burned
1-01-004-06	Grade 5 Oil: Tangential Firing	0.8	Gallons Residual Oil Burned

External Combustion Boilers: Electric Generation - Distillate Oil

1-01-005-01	Grades 1 and 2 oil	0.8	Gallons Distillate Oil Burned
1-01-005-04	Grade 4 Oil: Normal Firing	0.8	Gallons Distillate Oil Burned
1-01-005-05	Grade 4 Oil: Tangential Firing	0.8	Gallons Distillate Oil Burned

External Combustion Boilers: Electric Generation - Natural Gas

1-01-006-01	Boilers >100 Million Btu/hr except Tangential	3.2	Cubic Feet of Natural Gas
1-01-006-02	Boilers <100 Million Btu/hr except Tangential	3.2	Cubic Feet of Natural Gas
1-01-006-04	Tangentially Fired units	3.2	Cubic Feet of Natural Gas

External Combustion Boilers - Industrial**External Combustion Boilers: Industrial - Anthracite Coal**

1-02-001-04	Pulverized Coal:Traveling Grate (overfeed)Stoker	0.565	1000 Tons Anthracite Burned
1-02-001-07	Hand Fired	0.63	1000 Tons Anthracite Burned
1-02-001-17	Fluidized Bed Boiler Burning Anthracite Coal	0.565	1000 Tons Anthracite Burned

External Combustion Boilers: Industrial - Bituminous/Subbituminous Coal

1-02-002-01	Pulverized Coal: Wet Bottom	0.565	1000 Tons Bituminous Coal Burned
1-02-002-02	Pulverized Coal: Dry Bottom	0.565	1000 Tons Bituminous Coal Burned
1-02-002-03	Cyclone Furnace	0.565	1000 Tons Bituminous Coal Burned
1-02-002-04	Spreader Stoker	0.565	1000 Tons Bituminous Coal Burned
1-02-002-05	Overfeed Stoker	0.565	1000 Tons Bituminous Coal Burned
1-02-002-06	Underfeed Stoker	0.565	1000 Tons Bituminous Coal Burned
1-02-002-10	Overfeed Stoker	0.565	1000 Tons Bituminous Coal Burned
1-02-002-12	Pulverized Coal: Dry Bottom (Tangential)	0.565	1000 Tons Bituminous Coal Burned
1-02-002-13	Pulverized Coal: Wet Slurry (Tangential)	0.565	1000 Tons Bituminous Coal Burned
1-02-002-18	Atmospheric Fluidized Bed Combustion: Circulating Bed	0.565	1000 Tons Bituminous Coal Burned

1-02-002-19	Cogeneration	0.565	1000 Tons Bituminous Coal Burned
1-02-002-21	Pulverized Coal: Wet Bottom	0.565	1000 Tons SubBituminous Coal Burned
1-02-002-22	Pulverized Coal: Dry Bottom	0.565	1000 Tons SubBituminous Coal Burned
1-02-002-23	Cyclone Furnace	0.565	1000 Tons SubBituminous Coal Burned
1-02-002-24	Spreader Stoker	0.565	1000 Tons SubBituminous Coal Burned
1-02-002-25	Traveling Grate (Overfeed) Stoker	0.565	1000 Tons SubBituminous Coal Burned
1-02-002-26	Pulverized Coal: Dry Bottom (Tangential)	0.565	1000 Tons SubBituminous Coal Burned
1-02-002-29	Cogeneration	0.565	1000 Tons SubBituminous Coal Burned

External Combustion Boilers: Industrial - Residual Oil

1-02-004-01	Grade 6 oil	0.8	Gallons Residual Oil Burned
1-02-004-02	10-100 Million Btu/hr	0.8	Gallons Residual Oil Burned
1-02-004-03	<10 Million Btu/hr	0.8	Gallons Residual Oil Burned
1-02-004-04	Grade 5 oil	0.8	Gallons Residual Oil Burned
1-02-004-05	Cogeneration	0.8	Gallons Residual Oil Burned

External Combustion Boilers: Industrial - Distillate Oil

1-02-005-01	Grade 1 and 2 oil	0.8	Gallons Distillate Oil Burned
1-02-005-02	10-100 Million Btu/hr	0.8	Gallons Distillate Oil Burned
1-02-005-03	<10 Million Btu/hr	0.8	Gallons Distillate Oil Burned
1-02-005-04	Grade 4 oil	0.8	Gallons Distillate Oil Burned
1-02-005-05	Cogeneration	0.8	Gallons Distillate Oil Burned

External Combustion Boilers: Industrial - Natural Gas

1-02-006-01	>100 Million Btu/hr	3.2	Cubic Feet Natural Gas
1-02-006-02	10-100 Million Btu/hr	3.2	Cubic Feet Natural Gas
1-02-006-03	<10 Million Btu/hr	3.2	Cubic Feet Natural Gas
1-02-006-04	Cogeneration	3.2	Cubic Feet Natural Gas

External Combustion Boilers - Commercial/Institutional

External Combustion Boilers: Commercial/Institutional - Bituminous/Subbituminous Coal -

1-03-002-03	Cyclone Furnace (Bituminous Coal)	0.565	1000 Tons Bituminous Coal Burned
1-03-002-05	Pulverized Coal: Wet Bottom	0.565	1000 Tons Bituminous Coal Burned

1-03-002-06	Pulverized Coal: Dry Bottom	0.565	1000 Tons Bituminuous Coal Burned
1-03-002-07	Overfeed Stoker	0.565	1000 Tons Bituminuous Coal Burned
1-03-002-09	Spreader Stoker (Bituminous Coal)	0.565	1000 Tons Bituminous Coal Burned
1-03-002-11	Overfeed Stoker	0.565	1000 Tons Bituminous Coal Burned
1-03-002-16	Pulverized Coal: Dry Bottom	0.565	1000 Tons Bituminous Coal Burned
1-03-002-17	Atmospheric Fluidized Bed Combustion: Bubbling Bed	0.565	1000 Tons Bituminous Coal Burned
1-03-002-18	Atmospheric Fluidized Bed Combustion: Circulating Bed	0.565	1000 Tons Bituminous Coal Burned

INTERNAL COMBUSTION ENGINES

Internal Combustion Engines - Industrial

Internal Combustion Engines: Industrial - Natural Gas

2-02-002-52	2-cycle Lean Burn	0.0384	Million Btus Fuel Input
2-02-002-53	4-cycle Rich Burn	0.0095	Million Btus Fuel Input
2-02-002-54	4-cycle Lean Burn	0.0000771	Million Btus Fuel Input

Internal Combustion Engines: Industrial - Large Bore Engine

2-02-004-01	Diesel	6.5	1000 Gallons Diesel Burned
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Internal Combustion Engines - Commercial/Institutional

Internal Combustion Engines: Commercial/Institutional - Distillate Oil (Diesel)

2-03-001-01	Reciprocating	42.5	1000 Gallons Distillate Oil (Diesel) Burned
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Internal Combustion Engines: Commercial/Institutional - Gasoline

2-03-003-01	Reciprocating	12.6	1000 Gallons Gasoline Burned
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INDUSTRIAL PROCESSES

Industrial Processes - Chemical Manufacturing - Ammonia Production

3-01-003-08	Carbon Dioxide Regenerator	2	Tons Ammonia Produced
3-01-003-09	Condensate Stripper	2.2	Tons Ammonia Produced

Industrial Processes: Chemical Manufacturing - Ammonium Nitrate Production

3-01-027-04	Neutralizer	36	Tons Ammonium Nitrate Produced
3-01-027-07	Rotary Drum Granulator	59	Tons Ammonium Nitrate Produced
3-01-027-08	Pan Granulator	36	Tons Ammonium Nitrate Produced
3-01-027-11	Neutralizer: High Density	36	Tons Ammonium Nitrate Produced
3-01-027-12	Prilling Tower: High Density	57	Tons Ammonium Nitrate Produced
3-01-027014	Prilling Cooler: High Density	0.04	Tons Ammonium Nitrate Produced
3-01-027-17	Evaporator/Concentrator: High Density	33	Tons Ammonium Nitrate Produced
3-01-027-21	Neutralizer: Low Density	36	Tons Ammonium Nitrate Produced
3-01-027-22	Prilling Tower: Low Density	0.26	Tons Ammonium Nitrate Produced
3-01-027-24	Prilling Cooler: Low Density	0.3	Tons Ammonium Nitrate Produced
3-01-027-25	Prilling Dryer: Low Density	3.18	Tons Ammonium Nitrate Produced
3-01-027-27	Evaporator/Concentrator: Low Density	33.4	Tons Ammonium Nitrate Produced

Industrial Processes: Chemical Manufacturing - Ammonium Phosphates

3-01-030-00	Entire Plant	0.14	Tons P2O5 Produced
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Industrial Processes: Chemical Manufacturing - Urea Production

3-01-040-08	Non-fluidized Bed Prilling (Agricultural Grade)	0.87	Tons Urea Produced
3-01-040-10	Fluidized Bed Prilling (Agricultural Grade)	2.9	Tons Urea Produced
3-01-040-11	Fluidized Bed Prilling (Feed Grade)	4.14	Tons Urea Produced
3-01-040-12	Rotary Drum Cooler	0.05	Tons Urea Produced

Industrial Processes - Food and Agriculture**Industrial Processes: Food and Agriculture - Grain Millings**

3-02-007-09	Barley Malting: Gas-fired Malt Kiln	0.075	Tons Grain Processed
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Industrial Processes: Food and Agriculture - Beer Production

3-02-009-30	Brewers Grain Dryer: Natural Gas-fired	0.091	Tons Dried Grain Produced
3-02-009-32	Brewers Grain Dryer: Steam-heated	0.091	Tons Dried Grain Produced

Industrial Processes: Food and Agriculture - Meat Smokehouses

3-02-013-02	Batch Smokehouses: Smoking Cycle	23	Tons Sawdust Used
3-02-013-04	Continuous Smokehouse: Smoke Zone	66	Tons Sawdust Used

Industrial Processes - Primary Metal Production**Industrial Processes: Primary Metal Production - Aluminum Ore (Electro-reduction)**

3-03-001-02	Horizontal Stud Soderberg Cell	39.2	Tons Molten Aluminum Produced
3-03-001-08	Prebake: Fugitive Emissions	1.4	Tons Molten Aluminum Produced
3-03-001-09	H.S.S.: Fugitive Emissions	1.7	Tons Molten Aluminum Produced

Industrial Processes: Primary Metal Production - By-product Coke Manufacturing

3-03-003-02	Oven Charging	0.26	Tons Coal Charged
3-03-003-03	Oven Pushing	0.1	Tons Coal Charged
3-03-003-08	Oven/Door Leaks	0.06	Tons Coal Charged

Industrial Processes - Primary Metal Production**Industrial Processes: Primary Metal Production - By-product Coke Manufacturing**

3-03-003-13	Coal Preheater	2.1	Tons Coal Charged
3-03-003-17	Combustion Stack: Coke Oven Gas (COG)	0.44	Tons Coal Charged

Industrial Processes: Primary Metal Production - Ferroalloy, Open Furnace

3-03-006-01	50% FeSi: Electric Smelting Furnace	40	Tons Material Produced
3-03-006-04	Silicon Metal: Electric Smelting Furnace	654	Tons Material Produced
3-03-006-05	Silicomanganese: Electric Smelting Furnace	125	Tons Material Produced
3-03-006-06	80% Ferromanganese	17	Tons Material Produced
3-03-006-07	80% Ferrochromium	99	Tons Material Produced

Industrial Processes: Primary Metal Production - Iron Production

3-03-008-13	Windbox	0.56	Tons Material Produced
3-03-008-25	Cast House	0.14	Tons Material Produced

Industrial Processes: Primary Metal Production - Steel Manufacturing

3-03-009-01	Open Hearth Furnace: Stack	12.7	Tons Material Produced
3-03-009-13	Basic Oxygen Furnace: Open Hood-Stack	0.0044	Tons Material Produced
3-03-009-16	Charging: BOF	0.13	Tons Material Produced
3-03-009-17	Tapping: BOF	0.34	Tons Material Produced

Industrial Processes - Secondary Metal Production

Industrial Processes: Secondary Metal Production - Aluminum

3-04-001-03	Smelting Furnace/Reverberatory	2.16	Tons Metal Produced
3-04-001-04	Fluxing: Chlorination	199	Tons Metal Produced

Industrial Processes: Secondary Metal Production - Grey Iron Foundries

3-04-003-01	Cupola	11.6	Tons Metal Produced
3-04-003-18	Pouring, Cooling	1	Tons Metal Produced
3-04-003-31	Casting Shakeout	1.34	Tons Metal Produced

Industrial Processes - Mineral Products**Industrial Processes: Mineral Products - Brick Manufacture**

3-05-003-10	Curing and Firing: Sawdust Fired Tunnel Kilns	0.16	Tons Brick Produced
3-05-003-13	Curing and Firing: Coal-fired Tunnel Kilns	0.28	Tons Brick Produced

Industrial Processes - Mineral Products**Industrial Processes: Mineral Products - Castable Refractory**

3-05-005-01	Fire Clay: Rotary Dryer	1.6	Tons Feed Material Fed
3-05-005-06	Fire Clay: Rotary Calciner	8.3	Tons Feed Material Fed

Industrial Processes: Mineral Products - Cement Manufacturing (Wet Process)

3-05-007-06	Kilns 9.1 Tons Clinker Produced	9.1	Tons Clinker Produced
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Industrial Processes: Mineral Products - Coal Mining, Cleaning, and Material Handling

3-05-010-01	Fluidized Bed	3.8	Tons Feed Material Fed
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Industrial Processes: Mineral Products - Glass Manufacture

3-05-014-02	Container Glass: Melting Furnace	1.3	Tons Glass Produced
3-05-014-03	Flat Glass: Melting Furnace	1.8	Tons Glass Produced
3-05-014-04	Pressed and Blown Glass: Melting Furnace	16	Tons Glass Produced

Industrial Processes: Mineral Products - Lime Manufacture

3-05-016-18	Calcining: Coal-fired Rotary Kiln	4.9	Tons Lime Manufactured
3-05-016-20	Calcining: Coal- and Gas-fired Rotary Kiln	1.1	Tons Lime Manufactured

Industrial Processes: Mineral Products - Clay processing: Kaolin

Air Quality Source Registration Package Instructions

APPENDIX C: EXAMPLE CALCULATIONS

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3-05-041-41	Calcining, multiple hearth furnace	7.8	Tons Clay Produced
3-05-041-42	Calcining, flash calciner	280	Tons Clay Produced

Industrial Processes: Mineral Products - Clay processing: Fire clay

3-05-043-30	Drying, rotary dryer	1.6	Tons Clay Produced
3-05-043-40	Calcining, rotary calciner	8.3	Tons Clay Produced

Industrial Processes: Mineral Products - Clay processing: Bentonite

3-05-044-30	Drying, rotary dryer	2	Tons Clay Produced
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Industrial Processes - Pulp and Paper and Wood Products

Industrial Processes: Pulp and Paper and Wood Products - Sulfate (Kraft) Pulping

3-07-001-04	Recovery Furnace/Direct Contact Evaporator	150	Tons Air-Dried Unbleached Pulp Produced
3-07-001-05	Smelt Dissolving Tank	5.1	Tons Air-Dried Unbleached Pulp Produced
3-07-001-06	Lime Kiln	5.9	Tons Air-Dried Unbleached Pulp Produced
3-07-001-10	Recovery Furnace/Indirect Contact Evaporator	180	Tons Air-Dried Unbleached Pulp Produced

WASTE DISPOSAL

Waste Disposal - Solid Waste Disposal - Government

Waste Disposal: Solid Waste Disposal - Government - Other Incineration




5-01-005-15	Sludge: Multiple Hearth	2.2	Tons Dried Sludge Fed
5-01-005-17	Sludge: Electric Infrared	2	Tons Dried Sludge Fed

Waste Disposal - Solid Waste Disposal - Government - Sewage Treatment

5-01-007-01	Entire Plant	1.9	Million Gallons Processed
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SECTION C.3: DETERMINING UNIVERSAL TRANSVERSE MERCATOR (UTM) COORDINATES

The Universal Transverse Mercator (UTM) Coordinates are an alternative to latitude and longitude for locating a point on earth's surface. They measure the distance in meters north (the vertical UTM coordinate) and east (the horizontal UTM coordinate) of a fixed point of origin located to the southwest. Instructions for determining the UTM coordinates for your facility from a United States Geological Survey (USGS) Topographical Map, in the 7.5 Minute Series follow.

DETERMINING UTM COORDINATES FROM A USGS TOPOGRAPHICAL MAP	
STEP 1	Locate your facility on the USGS Topographical Map, 7.5 Minute Series
STEP 2	<p>Find the perpendicular lines drawn across the map in 1000 meter (1 kilometer) intervals</p> <p>Follow one of them back to the edge of the map.</p> <p>At the edge of the map you will see numbers on most lines. The lines will be numbered in one of two ways. A few lines will be numbered in degrees and minutes as latitude and longitude, <i>e.g.</i>, 42°30'. However, most of the lines will be numbered in the following format: 274 or 4696. This number is a measure of thousands of meters from the point of origin for the UTM Coordinates.</p> <p><i>For example, the number 274 at the base of a vertical line means that any facility on that line is located 274,000 meters EAST of the point of origin for the UTM Coordinates. Similarly the number 4696 at the end of a horizontal line means that any facility located on that line is 4,696,000 meters NORTH of the point of origin for the UTM Coordinates.</i></p> <p>Figure C.3-1 Shows a corner of a USGS map with numbered UTM coordinate lines</p> <p> NOTE: To obtain the UTM number for a line that is not numbered or is numbered with a latitude or longitude measure, find the nearest horizontal line to the South (or the nearest vertical line to the East) that has a UTM number, and add 1 for EACH line between the line you are concerned about and the last numbered line.</p> <p> NOTE: Massachusetts falls within two UTM zones, which means there are two different "points of origin" in Massachusetts. As a result, the UTM numbers change dramatically in the towns (such as Rutland and Gardner) running down the middle of the state.</p>
STEP 3	<p>To obtain the Horizontal UTM (the easterly UTM):</p> <ul style="list-style-type: none">-Measure the distance in METERS (thousandths of kilometers) from your facility to the <i>nearest vertical line to the WEST</i> (the left). (The meters scale is at the bottom of the map) <p> NOTE: The easiest way to measure the distance between your facility and the <i>nearest vertical line to the west</i>, is to put one end of a small piece of paper or card (a business card or 3 X 5 file card works well) on your facility, and mark the point on the card that intersects the vertical line. Then bring the paper down to the kilometer scale at the base of the map, and measure the number of kilometers from the edge of the card to the point you marked on it. Finally, multiply the kilometers by 1000 to convert to meters (<i>e.g.</i>, .5 km equals 500 meters).</p> <ul style="list-style-type: none">-The Horizontal (easterly) UTM is the sum of the distance in meters from your facility to the nearest vertical line to the WEST and the meters represented by that vertical line. <p><i>For example, if the vertical line is labeled 274, and your facility was 500 meters to</i></p>


DETERMINING UTM COORDINATES FROM A USGS TOPOGRAPHICAL MAP

the east (right) of it, the Horizontal UTM will equal 274,000 meters + 500 meters or 274,500 meters.

STEP 4

To obtain the Vertical UTM (the northerly UTM):

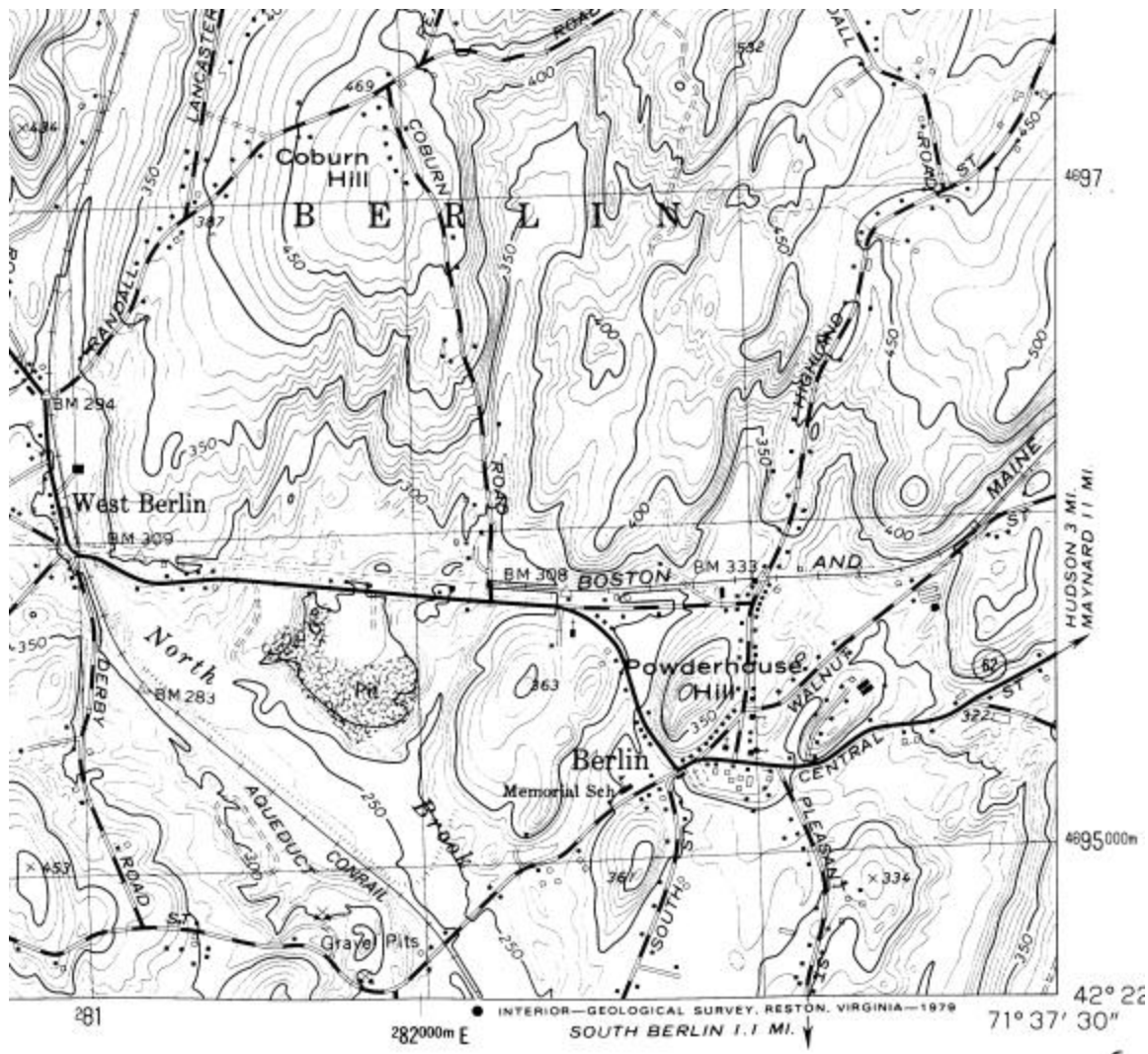
-Measure the distance in METERS from your facility to the *nearest horizontal line to the SOUTH* (down). (The meters scale is at the bottom of the map)

 NOTE: The easiest way to measure the distance between your facility and the *nearest horizontal line to the south* is to put one end of a small piece of paper or card (a business card or 3 X 5 file card works well) on your facility, and mark the point on the card that intersects the horizontal line. Then bring the paper down to the kilometer scale at the base of the map, and measure the number of kilometers from the edge of the card to the point you marked on it. Finally, multiply the kilometers by 1000 to convert to meters (*e.g., .5 km equals 5000 meters*).

.-The Vertical UTM (the northerly UTM) is the sum of the distance in meters from your facility to the nearest horizontal line to the SOUTH and the meters represented by that horizontal line.

For example, if nearest the horizontal line to the south of your facility is labeled 4696, and your facility is 250 meters to the north of it, the Vertical UTM will equal 4,696,000 meters + 250 meters or 4,696,250 meters.

Figure C.3-1
 Corner of a USGS Topographical Map Showing Horizontal and Vertical Coordinate
 Line Numbering



APPENDIX D: AIR POLLUTION CONTROL EQUIPMENT CODES

Control Equipment Identification Codes: Control equipment is used to limit the emission of pollutants to the atmosphere. Numerous types of control equipment may be in place at a facility. For emission statement reporting, your facility is required to report the primary and secondary control equipment. The following list details the different control equipment and their appropriate code.

000-no equipment	051-Tray Type Gas Absorption Column
001-Wet Scrubber high efficiency	052-Spray Tower
002-Wet Scrubber medium efficiency	053-Venturi Scrubber
003-Wet Scrubber low efficiency	054-Process Enclosed
004-Gravity Collector high efficiency	055-Impinger Plate Scrubber
005-Gravity Collector medium efficiency	056-Dynamic Separator (dry)
006-Gravity Collector low efficiency	057-Dynamic Separator (wet)
007-Centrifugal Collector high efficiency	058-Mat or Panel filter
008-Centrifugal Collector medium efficiency	059-Metal Fabric filter screen
009-Centrifugal Collector low efficiency	060-Process Gas Recovery
010-Electrostatic Precipitator high efficiency	061-Dust Suppress water spray
011-Electrostatic Precipitator medium efficiency	062-Dust Suppress wet agents
012-Electrostatic Precipitator low efficiency	063-Gravel Bed Filter
013-Gas Scrubber general	064-Annular Ring filter
014-Mist Eliminator high velocity	065-Catalytic Reduction
015-Mist Eliminator low velocity	066-Molecular sieve
016-Fabric Filter high temperature	067-Wet Lime Slurry scrubbing
017-Fabric Filter medium temperature	068-Alkaline Fly Ash scrubbing
018-Fabric Filter low temperature	069-Sodium Carbonate scrubbing
019-Catalytic Afterburner	070-Sodium Alkali scrubbing
020-Catalytic Afterburner heat exchange	071-Fluid Bed Dry scrubber
021-Direct Flame Afterburner	072-Tube and Shell Condenser
022-Direct Flame Afterburner heat exchange	073-Refrigerated Condenser
023-Flaring	074-Barometric Condenser
024-Modified Furnace burner design	075-Single Cyclone
025-Staged Combustion	076-Multiple Cyclone w/o fly ash reinjection
026-Flue gas Recalculation	077-Multiple Cyclone w/ fly ash reinjection
027-Reduce Combustion air preheat	078-Baffle
028-Steam or Water Injection	079-Dry Electrostatic Granular Filter
029-Low Excess air firing	080-Chemical Oxidation
030-Fuel low nitrogen content	081-Chemical Reduction
031-Air Injection	082-Ozonation
032-Ammonia Injection	083-Chemical Neutralization
033-Control of percent Oxygen in Combustible Air	084-Activated Clay Adsorption
034-Wellord/sodium sulfur scrubber	085-Wet Cyclonic Separator
035-Magnesium Oxide Scrubbing	086-Water Curtain
036-Dual Alkali Scrubbing	087-Nitrogen Blanket
037-Citrate Process Scrubbing	088-Conservation vent
038-Ammonia Scrubbing	089-Bottom Filling
039-Catalytic oxide flue gas desulfur	090-Conversion to Variable Vapor Space Tank
040-Alkalized Alumina	091-Conversion to Floating Roof Tank
041-Dry Limestone injection	092-Conversion to Pressurized tank
042-Wet Limestone injection	093-Submerged Filling
043-Sulfur Acid contact process	094-Underground Tank
044-Sulfur Acid dbl cnt process	095-White paint
045-Sulfur Plant	096-Vapor Lock Balance Recovery System
046-Process Change	097-Secondary Seal for External Floating Roof Tank
047-Vapor Recovery system	098-Moving Bed Dry Scrubber
048-Activated Carbon Adsorption	099-Miscellaneous Control Devices
049-Liquid Filtration System	101-High Efficiency Particulate Air Filter
050-Packed Gas Adsorption Column	

APPENDIX E: LIST OF MACT STANDARDS AND THEIR SUBSTANTIVE COMPLIANCE DATES

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					Date	FR #	Date	FR #		
F,G,H,I	Synthetic Organic Chemical Manufacturing*+	11/15/92			12/31/92	57-62608	4/22/94	59-19402	8/20/94	4/22/97
L	Coke Ovens*	12/31/92	30300302/14/08		12/4/92	57-57534	10/27/93	58-57911	NA	12/31/95
M	Dry Cleaning (perchloroethylene)**+	11/15/92	40100101/03	72- 15,16,18	12/9/91	56-64382	9/22/93	58-49354	6/18/94	9/23/96
N	Chromic Acid Anodizing/Decorative/Hard Electroplating**+	11/15/94			12/16/93	58-65768	1/25/95	60-4948	7/24/95	1/25/97
O	Commercial Sterilization Facilities**+	11/15/94			3/7/94	59-10591	12/6/94	59-62585	4/8/95	12/6/97
Q	Industrial Process Cooling Towers*+	11/15/94	30600701/02		8/11/93	58-43028	9/8/94	59-46339	9/8/95	3/8/96
R	Gasoline Distribution Stage 1*+	11/15/94	30600801/21		2/8/94	59-5868	12/14/94	59-64303	12/14/96	12/14/97
T	Halogenated Solvent Cleaners**+	11/15/94	40100201/55		11/29/93	58-62566	12/2/94	59-61801	8/29/95	12/2/97
U	Polymers and Resins - Group I*+	11/15/94			6/12/95	60-30801	9/5/96	61-46906	No	9/6/99
W	Epoxy Resins Production*+	11/15/94			5/16/94	59-25387	3/8/95	60-12670	7/6/95	3/8/98

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X	Secondary Lead Smelting**+	11/15/94	30400401/99	3341/336 4	6/9/94	59-29750	6/23/95	60-32587	10/21/95	6/23/97
Y	Marine Tank Vessel Loading*+	11/15/97			5/13/94	59-25004	9/19/95	60-48388	9/19/96	9/19/99
CC	Petroleum Refineries (Other Sources)*	11/15/94	30600401/--		7/14/94	59-36310	8/18/95	60-43244	NA	8/18/98
DD	Off-Site Waste and Recovery Operations*+	11/15/94	50100105/5039001 0		10/13/94	59-51913	7/1/96	61-34140	9/29/96	7/1/99
EE	Magnetic Tapes (Surface Coating)*+	11/15/94			3/11/94	59-11662	12/15/94	59-64580	4/15/95	12/15/97
GG	Aerospace Industries*+	11/15/94	40202401/99		6/6/94	59-29216	9/1/95	60-45948	9/1/97	9/1/98
II	Shipbuilding & Ship Repair (Surface Coating)*+	11/15/94	40202301/99		12/6/94	59-62681	12/15/95	60-64330	12/16/96	12/16/97
JJ	Wood Furniture (Surface Coating)*+	11/15/94	40201901/99	2511/12/ 17/21	12/6/94	59-62652	12/7/95	60-62930	9/3/96	11/21/97
KK	Printing/Publishing (Surface Coating)*+	11/15/94	40500101/4058880 5		3/14/95	60-13664	5/30/96	61-27132	5/30/98	5/30/99
JJJ	Polymers and Resins - Group IV*+	11/15/94	30101849		3/29/95	60-16090	9/12/96	61-48208	No	9/13/99

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MMM	Pesticide Active Ingredient Production*+	11/15/97			11/10/97	62-60565	6/23/99	64-33550	10/21/99	6/23/02
YY	Acetal Resins Production*+	11/15/97			10/14/98	63-55178	6/29/99	64-34854	6/29/00	6/29/02
YY	Acrylic Fibers/Modacrylic Fibers Production*+	11/15/97			10/14/98	63-55178	6/29/99	64-34854	6/29/00	6/29/02
OOO	Amino Resins Production *+	11/15/97	30101832		12/14/98	63-68832	1/20/00	65-39290	1/20/03	
IIII	Mercury Cell Chlor-Alkali Plants	11/15/2000	30100799		07/03/02	67-44671				
XXX	Ferroalloys Production*+	11/15/97	30300601/3030070 4		8/4/98	63-41508	5/20/99	64-27450	9/17/99	5/20/01
III	Flexible PolyurethaneFoamProduction *+	11/15/97	30101880/85		12/27/96	61-68406	10/7/98	63-53980	2/4/99	10/8/01
YY	Cyanide Chemicals Manufacturing *	11/15/00	30103901/03		12/06/00	65-76408	07/12/02	67-427258	07/12/03	07/12/05
DDD	Mineral Wool Production*+	11/15/97	305017xx		5/8/97	62-25370	6/1/99	64-29490	9/30/99	6/1/02

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					Date	FR #	Date	FR #	Date	Date
HH	Oil and Natural Gas Production*	11/15/97	31000101/31088 805		2/6/98	63-6288	6/17/99	64-32610	6/17/00	6/17/02
UUU	Petroleum Refineries – Catalytic Cracking *	11/15/97	30600201/3060030 1		9/11/98	63-48890	04/11/02	67-17762	08/09/02	04/11/05
GGG	Pharmaceuticals Production*+	11/15/97	30106001/99		4/2/97	62-15753	9/21/98	63-50280	01/19/99	09/21/01
OOO	Phenolic Resins Production*+	11/15/97			12/14/98	63-68832	1/20/00	65-3290		1/20/03
YY	Polycarbonates Production*+	11/15/97			10/14/98	63-55178	6/29/99	64-34854	6/29/00	06/29/02
PPP	Polyether Polyols Production*+	11/15/97			9/4/97	62-46804	6/1/99	64-29420	6/1/00	6/1/02
LLL	Portland Cement Manufacturing*+	11/15/97	30500606/3050079 9		3/24/98	63-14182	6/14/99	64-31898	10/12/99	6/10/02
LL	Primary Aluminum Production*	11/15/97	30300101/3030020 1		9/26/96	61-50585	10/7/97	62-52384		10/07/99
QQQ	Primary Copper Smelting*	11/15/97	30300502/99		4/20/98	63-19582	06/12/02	67-40478	10/10/02	06/13/05

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					Date	FR #	Date	FR #		
TTT	Primary Lead Smelting *	11/15/97	30301001/99		4/17/98	63-19200	6/4/99	64-30194	10/2/99	6/4/01
VVV	Public Owned Treatment Works*+	11/15/95	50100701/04		12/1/98	63-66084	10/26/99	64-57572		10/26/02
S	Pulp and Paper Production (MACT I & III)*+	11/15/97	30700101/3070030 4/30701301/99	2611/21/ 31	12/17/93	58-66078	4/15/98	63-18504	04/15/99	04/15/01
MM	Pulp and Paper Production (MACT II)*	11/15/97			4/15/98	63-18754	1/12/01	66-3180	05/12/01	03/13/04
WWWW	Reinforced Plastic Composites Production	11/15/2000			08/02/01	66-40324				
RRR	Secondary Aluminum Production**+	11/15/97	30400101/99	3341/53/ 54/55/63/ 65	2/11/99	64-6946	3/23/01	65-15689	07/21/00	03/24/03
CCC	Steel Pickling - HCl Process*+	11/15/97			9/18/97	62-49052	6/22/99	64-33202	10/20/99	6/22/01
NNN	Wool Fiberglass Manufacturing*+	11/15/97	30501201/99		3/31/97	62-15228	6/14/99	64-31695	10/12/99	6/14/02
LLLLL	Asphalt Processing	11/15/2000	30500101/02/3050 0206/08		11/21/01	66-58610				
LLLLL	Asphalt Roofing Manufacturing	11/15/2000	30500101/99		11/21/01	66-58610				

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					Date	FR #	Date	FR #		
MMMM	Asphalt/Coal Tar Application - Metal Pipes	11/15/2000	30901601/07		08/13/02	67-52780				
	Auto and Light Duty Truck (Surface Coating)	11/15/2000	40201601/99	3771/371 3						
CCCC	Nutritional Yeast Manufacturing*	11/15/2000		2051/205 2	10/19/98	63-55812	05/21/01	66-27876		05/21/04
VVVV	Boat Manufacturing*	11/15/2000			07/14/00	65-43842	08/22/01	66-44218		08/22/04
UUUU	Carboxymethylcellulose Production *	11/15/00			08/28/00	65-52166	06/11/02	67-40044	10/09/02	06/13/05
UUUU	Cellophane Production	11/15/2000			08/28/00	65-52166	06/11/02	67-40044	10/09/02	06/13/05
UUUU	Cellulose Ethers Production	11/15/2000			08/28/00	65-52166	06/11/02	67-40044	10/09/02	06/13/05
SSSSS	Refractory Products Mfg	11/15/2000			06/20/02	67-42108				
JJJJJ	Brick & Structural Clay Products Manufacturing	11/15/2000	30500801/3050099 9		07/22/02	67-47894				
JJJJJ	Clay Ceramics Mfg	11/15/00			07/22/02	67-47894				

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APPENDIX E: LIST OF MACT STANDARDS AND THEIR SUBSTANTIVE COMPLIANCE DATES

40 CFR Part 63 Subpart	Source Category	Statutory Deadline for EPA to Promulgate the Standard	SCC Code	SIC Code	Proposed Regulation: Federal Register (FR) Notice		Final Regulations Federal Register (FR) Notice		Notification	Substantive Compliance
					Date	FR #	Date	FR #	Date	Date
CCCCC	Coke Ovens: Pushing, Quenching and Battery Stacks	11/15/2000	30300303/04		07/03/01	66-35326				
PPPPP	Engine Test Cells/Stands	11/15/00	20400102/2040040 2		05/14/02	67-34548				
QQQQ	Flat Wood Paneling (Surface Coating)	11/15/2000	40202101/99	2435/92/ 99	06/21/02	67-42400				
EEE	Hazardous Waste Incinerators **+	11/15/2000	50200101/05/5030 0501		04/19/99	64-17358	09/30/99	64-52828		
FFFF	Hydrazine Production	11/15/2000								
NNNNN	Hydrochloric Acid Production	11/15/00	30101101/99		09/18/01	66-48174				
YY	Hydrogen Fluoride Production*	11/15/2000	30101202/99		10/14/98	63-55178	6/29/99	64-34854	6/29/00	6/29/02
	Industrial Boilers	11/15/2000	10200101/1020140 4							
	Institutional/Commercial Boilers	11/15/2000	10300101/1030130 3							

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** The MACT standard apply to major and non-major sources

+ MA DEP has accepted delegation (for Title V sources only)

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					Date	FR #	Date	FR #		
FFFF	Integrated Iron and Steel Manufacturing	11/15/2000	30300801/3030099		07/13/01	66-36836				
	Iron Foundries	11/15/2000	30400301/99							
NNNN	Large Appliances (Surface Coating)*	11/15/2000	40201401/99		12/22/00	65-81133	07/23/02	67-48254	07/23/03	07/25/05
	Lime Manufacturing	11/15/2000	30501601/99,30502001/99							
	Metal Can (Surface Coating)	11/15/2000	40201702/99							
SSSS	Metal Coil (Surface Coating)	11/15/2000	40201801/99	3353/3354	07/18/00	65-44616	06/10/02	67-39794	06/10/04	06/10/05
RRRR	Metal Furniture (Surface Coating)	11/15/2000	40202001/99	2514/2522	04/24/02	67-20206				
UUUU	Methylcellulose Production	11/15/2000			08/28/00	65-52166	06/11/02	67-40044	10/09/02	06/13-05
MMMM	Miscellaneous Metal Parts and Products (Surface Coating)	11/15/2000	40202501/99		08/13/02	67-52780				
FFFF	Miscellaneous Organic Chemical Mfc	11/15/00			04/04/02	67-16154				

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					Date	FR #	Date	FR #		
HHHHH	Miscellaneous Coating Mfc	11/15/00			04/04/02	67-15154				
AAAA	Municipal Solid Waste Landfills	11/15/2000	50200601/02,5030 0601/03		11/07/00	65-66672				
EEEE	Organic Liquids Distribution (non- gasoline)	11/15/2000	40700401/4089999 9		04/02/02	67-15674				
	Paint Stripping Operations	11/15/2000								
JJJJ	Paper and Other Webs (Surface Coating)	11/15/2000	30701199/4020130 1/99		09/13/00	65-55332				
BB	Phosphate Fertilizers Production*+	11/15/97	30102801/3010309 9		12/27/96	61-68430	6/10/99	64-31358	10/8/99	6/10/02
AA	Phosphoric Acid Manufacturing *	11/15/97	30101601/3010179 9		12/27/96	61-68430	6/10/99	64-31358	10/8/99	6/10/02
	Plastic Parts and Products (Surface Coating)	11/15/2000	40202201/99							
	Plywood/Particle Board Manufacturing	11/15/2000								

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					Date	FR #	Date	FR #	Date	Date
FFFF	Polyvinyl Butyral Production	11/15/2000								
J	Polyvinyl Chloride and Copolymers Production	11/15/2000			12/08/00	65-76958	07/10/02	67-45886		07/10/02
	Primary Magnesium Refining	11/15/2000	30400601/99							
OOOO	Printing, Coating and Dyeing of Fabrics	11/15/2000	40201101/4020121 0		07/11/02	67-46028				
	Process Heaters	11/15/2000	30190001/--							
UUUU	Rayon Production	11/15/2000	30102501		08/28/00	65-52166	06/11/02	67-40044	1-/09/02	06/13/05
BBBBB	Semiconductor Manufacturing	11/15/2000			05/08/02	67-30848				
GGGGG	Site Remediation	11/15/2000			07/30/02	67-49398				
YY	Spandex Production*	11/15/2000			12/06/00	65-76408	07/12/02	67-46258	07/12/03	07/12/05
	Reciprocating Internal Combustion Engines	11/15/2000	20100202---							

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					Date	FR #	Date	FR #		
	Combustion Turbines	11/15/2000	20100201/---							
	Steel Foundries	11/15/2000	30400701/99							
	Taconite Iron Ore Processing	11/15/2000	30302301/22							
XXXX	Rubber Tire Manufacturing	11/15/2000	30800101/99	3011/753 4	10/18/00	65-62414	07/07/02	67-45588	11/06/02	07/11/05
GGGG	Vegetable Oil Production	11/15/2000	30201904/99	2046/74/ 76/79	05/26/00	65-34252	04/12/01	66-19006		04/12/04
YY	Carbon Black Manufacturing*	11/15/2000			12/06/00	65-76408	07/12/02	67-46258	07/12/03	07/12/05
YY	Ethylene Process*	11/15/2000			12/06/00	65-76408	07/12/02	67-46258	07/12/03	07/12/05
MMMMM	Flexible Polyurethane Foam Fabrication Operation	11/15/2000			08/08/01	66-41718				
QQQQQ	Friction Products Manufacturing	11/15/2000			10/04/00	66-50768	10/18/02	67-64498	02/15/03	10/18/05
TTTT	Leather Finishing Operation*	11/15/2000			10/02/00	65-58702	02/27/02	67-9156	06/27/02	02/28/05

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					Date	FR #	Date	FR #	Date	Date
HHH	Natural Gas Storage & Transmission*+	11/15/2000			2/6/98	63-6326	6/17/99	64-32610	6/17/00	6/17/02
HHHH	Wet-Formed Fiberglass Mat Production*	11/15/2000			05/26/00	65-34278	04/11/02	67-17823	08/09/02	04/11/05

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APPENDIX F: MassDEP REGIONAL OFFICES – DEP Regional Facility Master File (FMF) Contacts

Information on MassDEP programs, permits, applications, forms and fees can be found on our website at www.mass.gov/dep/
For specific information about your Annual Compliance Fee invoices and payments, please e-mail us at dep.compliance-fees@state.ma.us or call our **Helpline at 1-888-846-4067**.

Between February and May 2006, the MassDEP will be reassigning 21 Cities and Towns to different MassDEP Regional Offices. The following list shows the affected communities underlined. For additional information on the boundary shifts including the transition dates please visit the MassDEP website at www.mass.gov/dep/regionalboundarychanges.htm

If you have questions regarding your facility permit status or other regulatory requirements,
Please locate your town on the list below and all the regional staff contact listed on the left.

DEP Western Regional Office	Adams Agawam Alford Amherst Ashfield <u>Athol</u> Becket Belchertown Bernardston Blandford Brimfield Buckland Charlemont Cheshire Chester Chesterfield Chicopee Clarksburg	Colrain Conway Cummington Dalton Deerfield Easthampton East Longmeadow Egremont Erving Florida Hardwick Gill Goshen Granby Granville Great Barrington	Greenfield Hadley Hampden Hancock Hatfield Hawley Heath Hinsdale Holland Holyoke Huntington Lanesborough Lee Lenox Leverett Leyden Longmeadow Ludlow Middlefield	Monroe Montague Monterey Montgomery Monson Mount Washington New Ashford New Marlborough New Salem North Adams Northampton Northfield Orange Otis Palmer Pelham Petersham	Peru Pittsfield Plainfield Richmond Rowe Royalston Russell Sandisfield Savoy Sheffield Shelburne Shutesbury Southampton South Hadley Southwick Springfield Stockbridge Sunderland	Tolland Tyringham Wales Ware Warren Warwick Washington Wendell Westfield Westhampton West Springfield West Stockbridge Whately Wilbraham Williamsburg Williamstown Windsor Worthington
DEP Central Regional Office	Acton Ashburnham Ashby Auburn Ayer Barre Bellingham Berlin Blackstone Bolton Boxborough Boylston Brookfield Charlton	Clinton Douglas Dudley Dunstable Franklin East Brookfield Fitchburg Gardner Grafton Groton Harvard Holden Hopedale	Hopkinton Hubbardston Hudson Holliston Lancaster Leicester Leominster Littleton Lunenburg Marlborough Maynard Medfield Mendon Milford	Millbury Millis Millville New Braintree Norfolk Northborough Northbridge North Brookfield Oakham Oxford Paxton Pepperell Phillipston Princeton	Rutland Shirley Shrewsbury Southborough Southbridge Spencer Sterling Stow Sturbridge Sutton Templeton Townsend	Upton Uxbridge Webster Westborough West Boylston West Brookfield Westminster Winchendon Worcester

DEP Southeast
Regional Office

Laura Patriarca
20 Riverside Drive
Lakeville, MA 02347
Phone: 508-946-2829
Fax: 508-947-6557
TDD: 508-946-2795

Abington
Acushnet
Attleboro
Avon
Barnstable
Berkley
Bourne
Braintree
Brewster
Bridgewater
Brockton
Canton
Carver
Chatham
Chilmark

Cohasset
Dartmouth
Dennis
Dighton
Duxbury
Eastham
East
Bridgewater
Easton
Edgartown
Fairhaven
Fall River
Falmouth
Foxborough
Freetown

Gay Head
Gosnold
Halifax
Hanover
Hanson
Harwich
Hingham
Holbrook
Hull
Kingston
Lakeville
Mansfield
Marion
Marshfield
Mashpee

Mattapoisett
Middleborough
Nantucket
NewBedford
North
Attleborough
Norton
Norwell
Norwood
Oak Bluffs
Orleans
Pembroke
Plainville
Plymouth
Plympton

Provincetown
Randolph
Raynham
Rehoboth
Rochester
Rockland
Sandwich
Scituate
Seekonk
Sharon
Somerset
Stoughton
Swansea
Taunton
Tisbury

Truro
Walpole
Wareham
Wellfleet
West
Bridgewater
Westport
West Tisbury
Weymouth
Whitman
Wrentham
Yarmouth

DEP Northeast
Regional Office

Mary Persky
205B Lowell Street
Wilmington, MA 01887
Phone: 978 694-3272
Fax: (978) 694-3499

Amesbury
Andover
Arlington
Ashland
Bedford
Belmont
Beverly
Billerica
Boston
Boxford
Brookline
Burlington
Cambridge
Carlisle

Chelmsford
Chelsea
Concord
Danvers
Dedham
Dover
Dracut
Essex
Everett
Framingham
Georgetown
Gloucester
Groveland
Hamilton
Haverhill

Ipswich
Lawrence
Lexington
Lincoln
Lowell
Lynn
Lynnfield
Malden
Manchester-By-The-Sea
Marblehead
Medford
Melrose
Merrimac
Methuen

Middleton
Milton
Nahant
Natick
Needham
Newbury
Newburyport
Newton
North Andover
North Reading
Peabody
Quincy
Reading
Revere

Topsfield
Wakefield
Rockport
Rowley
Salem
Salisbury
Saugus
Sherborn
Somerville
Stoneham
Sudbury
Swampscott
Tewksbury
Tyngsborough

Waltham
Watertown
Wayland
Wellesley
Wenham
Westford
West Newbury
Weston
Westwood
Wilmington
Winchester
Winthrop
Woburn

MassDEP
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF CHANGE IN REGIONAL BOUNDARIES

For more information on the changes, please visit the MassDEP website at <http://www.mass.gov/dep/about/regional.htm>.

TOWNS: Athol, Hardwick, Petersham, Royalston, Warren Effective Date: February 1, 2006	
Current Regional Office	New Regional Office
MassDEP-Central Regional Office 627 Main Street Worcester, MA 01608 Phone: (508) 792-7650 Fax: (508) 792-7621 Martin Suuberg, Director	MassDEP - Western Regional Office 436 Dwight Street Springfield, MA 01103 Phone: (413) 784-1100 Fax: (413) 784-1149 Michael Gorski, Director
TOWNS: Braintree, Canton, Cohasset, Hingham, Holbrook, Hull, Randolph, Norwood, Walpole, Weymouth Effective Date: May 1, 2006	
Current Regional Office	New Regional Office
MassDEP-Northeast Regional Office 205B Lowell Street Wilmington, MA 01887 Phone: (978) 694-3200 Fax: (978) 694-3499 Dick Chalpin, Director	MassDEP - Southeast Regional Office 20 Riverside Drive Lakeville, MA 02347 Phone: (508) 946-2700 Fax: (508) 947-6557 Gary S. Moran, Director
TOWNS: Medfield, Millis, Norfolk Effective Date: May 1, 2006	
Current Regional Office	New Regional Office
MassDEP-Northeast Regional Office 205B Lowell Street Wilmington, MA 01887 Phone: (978) 694-3200 Fax: (978) 694-3499 Dick Chalpin, Director	MassDEP-Central Regional Office 627 Main Street Worcester, MA 01608 Phone: (508) 792-7650 Fax: (508) 792-7621 Martin Suuberg, Director
TOWN: Franklin Effective Date: May 1, 2006	
Current Regional Office	New Regional Office
MassDEP - Southeast Regional Office 20 Riverside Drive Lakeville, MA 02347 Phone: (508) 946-2700 Fax: (508) 947-6557 Gary S. Moran, Director	MassDEP-Central Regional Office 627 Main Street Worcester, MA 01608 Phone: (508) 792-7650 Fax: (508) 792-7621 Martin Suuberg, Director

TOWN: Tyngsborough, Westford Effective Date: May 1, 2006	
Current Regional Office	New Regional Office
MassDEP-Central Regional Office 627 Main Street Worcester, MA 01608 Phone: (508) 792-7650 Fax: (508) 792-7621 Martin Suuberg, Director	MassDEP-Northeast Regional Office 205B Lowell Street Wilmington, MA 01887 Phone: (978) 694-3200 Fax: (978) 694-3499 Dick Chalpin, Director